UNIVERSITY OF PENNSYLVANIA

AN EXPERIMENTAL INQUIRY INTO
THE USE OF SUGGESTERS
IN THE TEACHING OF AMERICAN HISTORY

HARRIET JANE LINK

A THESIS

IN EDUCATION

PRESENTED TO THE FACULTY OF THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

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FORMULATION OF THE PROBLEM

In the seventh year children of the Philadelphia Public Schools are asked for the first time to study history as a consecutive series of events bearing a cause and effect relationship to each other. In the earlier grades history is largely a matter of teaching the meaning of our national holidays and the simple presentation of the great leaders of the various epochs of the world's, and especially of American, history. The purpose back of this elementary approach is "to have the children achieve the spirit of the several periods and to learn the worth of the fundamental contribution each has made to the present."* Thus an apperceptive background is furnished for a later development of a more complete understanding of the great ideals upon which our own nation was founded and for giving meaning to our fundamental institutions.

The problem, then, is a three-fold one, being concerned with the selection, organization, and retention of significant historical ideas. That is, the child should be taught habits of selecting the important facts from the history narrative and of placing them in their proper relationship so that the outstanding issues, movements, and contributions of any period may be adequately interpreted by an immature mind. Having achieved this goal in the organization of essential facts, a means must be found of making the impressions thus attained a reasonably enduring acquisition.

The fact that most school children go through their American history with little or no notion of the true import of the facts to which their attention has been directed, and

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*The Course of Study in History, Grades One to Eight, for the Philadelphia Public Schools, 1921 Edition, p. 84.

that the final residue of the whole process is a sad jumble of irrelevant incidents and details, is too generally recognized to require demonstration. What is at the root of the difficulty? Is it poor teaching method, or poor study habits on the part of the children?

The general purpose of the present experiment is to attempt an improvement of the teaching method by building up and extending the apperceptive background through the use of suggesters so organized as to set up appropriate and reliable associations of sufficiently vivid charater to be retainable. By this means an effort is made to secure an appreciation of the significance of the facts taught and to provide a simple means of organizing them so that children can use and understand them. But this in itself is of comparatively little value unless the teacher succeeds in inducing the children to use the suggesters in their study. It is this phase of the scheme, i. e., practice in its use, that seeks to provide an improvement in the study habits of the children concerned in this experiment.

The specific purpose of this experiment, then, is to discover whether the use of a certain set of suggesters in the teaching of American history results in a better organization and retention of the essential facts of history than the conventional class room method in use in the Jones Junior High School.*

THE SUGGESTER METHOD * *

It is a common psychological truth that our mental experiences build up in consciousness an apperceptive mass that varies with the individual according to his own perceptual equipment and with the circumstances under which the experience first occurred. For instance, the color-blind child will not have the same associations for the color *red* that the child having perfect color discrimination will have. Both children perceive the same red object, but each will have associations for it that are individual with him and

*Described on p. 28—Presentation of Material of Instruction.

* * See "An Analysis of Education as Conduct Control."—A. Duncan Yocum, University of Pennsylvania, Philadelphia.

different from those of his fellows. Each experience, from the hearing of a single tone to the conception of an idea, is interpreted in terms of the subject's former experience. Thus, associations are multiplied and enriched with succeeding experiences to an almost unlimited degree.

The teacher facing a group of children for the first time knows that she must utilize common experiences so as to build up associations that will be unique for the subject she is presenting. In other words, there must be a specific and common interpretation of terms. If, for instance, the 7 A history teacher wants to teach the characteristics of the New England colonies, after the children have gained a clear notion of the general meaning of the term "characteristics" itself, she must first build up the inclusive associations for the suggestive idea symbolized by this word. Her next step is to teach her pupils to identify the facts and ideas about this group of colonies through these associations. She does this by selecting the associations that clearly characterize the concept that is to be built up. She makes her pupils see the Pilgrims in all their God-fearing uprightness, their indomitable courage, their steadfast respect for law and order and their freedom loving ideals. These are the characterizing associations here, but they will make but a superficial impression unless they are given meaning through illustrative incidents from New England history. The first step toward vitalizing these associations is by drawing upon the children's own experiences, or their observation of those of friends or relatives who have left European shores to seek new homes in America. Dramatization is another favorite means of making the associations about the Pilgrims more real and permanent. We give children, through temporary experiences afforded by this imitative process, a means of building up more extended associations, more inclusive of all that these characterizing attributes of our Pilgrim fathers represents.

In the "suggester" method this is attempted through the use of words and phrases certainly memorized with a gen-

eral idea or important location and in their sum total inclusively suggestive of all that idea or location should recall. Suggesters may be of two types: first, those that call up concrete ideas definitely associated with characterizing words; second, those that give rise to more extended ideas arising from wider, or more complex, associations. For the sake of convenience the first type is designated as *word* suggesters and the second as *idea* suggesters. Word suggesters serve to recall other words associated with them, thus contributing to the child's vocabulary and enabling him better to express his observations and experiences. Any simple type of classification makes use of word suggesters; types of animals, types of rivers, types of trees, parts of animals, parts of rivers, parts of trees, etc., are familiar examples. While they may serve also as idea suggesters, their chief outcome or product is the introduction and gradual assimilation of new words; i. e., vocabulary expansion.

Idea suggesters are those which, as their name implies, call up associated ideas, rather than mere words, about a given thing. Any category that has to do with use, or purpose, or stages of development, etc., involves the use of idea suggesters. They may have no part in adding to the learner's vocabulary, but they do broaden his notions and conceptions about the subject in hand. Thus, in history when we are dealing with various groups of peoples, we employ such idea suggesters as *feelings of* (these people) and *feelings about* (these same people on the part of others). By memorizing these suggesters in connection with *People*, children are reminded to call up the associations between the specific type or nationality under consideration and their peculiar attitudes, prejudices, or points of view, and the reaction to these attitudes, prejudices, or points of view on the part of others. The outcome should be an aid to the formation of impartial judgments on the part of the pupil in his study of history. Since acts are "primarily effects, while thoughts and feelings are causes," * we utilize

*Method in History—William Mace.

these "feeling" suggesters to bring about an insight into the causes of the events that are but the "outer form" * of history.

A long series of experiments has been performed during the last fifteen or eighteen years in Doctor Yocum's seminary in Education Research with a view to determining,

(1) The efficiency of suggesters in incurring a greater inclusiveness of associations for any general idea or location in connection with which a great number of facts and details should be recalled, and

(2) The organization of facts and details recalled.**

Doctor Yocum credits District Superintendent Samuel L.

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*Method in History—William Mace.

** In one of the first and simplest of them, the suggesters, *raw materials transportation, power,* and *market* were used in relation to *manufacturing cities* in two fourth grades in the E. M. Stanton School by Doctor Philip A. Boyer, who was at the time the principal of the school. With one group he emphasized the suggesters above named, and with the second group he taught the same material, but without emphasizing these suggesters or drilling upon them. As a result of this method used for about a month, he found a gain of 27% in the retention of factors considered important in the manufacturing cities studied, and a gain of 33% in the organization of the material by the "suggester method" as compared with results of the corresponding "non-suggester" group.

This experiment was followed by one in the same field conducted by Mr. Dowett Sondberg with two 8A grades in the McCall School In 1916. In this case the suggesters, *Latitude, Altitude, Winds, Mountains as barriers,* and *Ocean Currents,* were used with the experimental group in connection with the topic, *Climate,* in studying the various geographical Grand Divisions. Mr. Sondberg reports that the results of this experiment show a gain of 22% in retention of subject matter and a gain of 22.3% in the organization of material for the "suggester" group over the results of the "non-suggester" group. This experiment was conducted for a period slightly exceeding one month.

In 1918 Mr. J. Wesley Foote reported an experiment in the field of American History conducted in the John Hay Public School by a fellow teacher, Mr. Niebergall. The topic studied during the experiment was "Recent Economic and Political Development of the United States," and the suggesters used by the experimental group were, *Cause, Purpose, How accomplished,* and *Effects.* The results of four tests given in the course of the experiment conducted during the month of January, show a progressive gain for the "suggester group" of from 5.6% in the first test to 32.3% in the last test. From the standpoint of retention the gain was not so regular, the third test showing a gain of 12.7%, whereas the fourth and last test showed a gain of but 11.6%.

In the field of Biology an experiment was conducted for a period of eight weeks—from February 9 to April 17, 1925—by Mr. J. Wallace Saner with two 10-A classes in the Darby High School. The topic studied

Chew with raising the problem which resulted in his formulation of the suggester method. Mr. Chew's question was,

"How are we to determine among a large multitude of possible associations for anything which is important enough in its useful suggestiveness to be taught to children, those which are most worth presenting?"

Doctor Yocum's answer was:

"Those which, if they are themselves certainly retained in connection with the idea, will be most likely to suggest the others."

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was *Plants* (roots, stems, leaves, flowers, seeds, fruit). The suggesters used by the experimental group were as follows:

Group 1	Ingestion Digestion Egestion
Group II	Absorption Circulation Assimilation
Group III	Locomotion Reproduction Economic Importance

Mr. Saner concludes from the results of this experiment that "The group who receives instruction by the suggester method secures organization of material, definiteness of purpose, and a relationship of vital factors not secured by a class taught by the formal method."

One of the most carefully conducted experiments with suggesters was reported by Mr. James L. Twohig in June, 1926. He experimented with two 10-A classes in the William Penn High School in the field of Elements of Business upon the topics, *Negotiable Instruments*, *Transportation*, and *Insurance* from March 14 to June 18, 1926. The suggesters used were, *Purpose*, *Principal kinds*, *Parties*, *Papers*, *Prices*, and were applicable to all three topics studied. The classes were tested after the study of each topic and the combined results for pupils taking all three tests show 7.7% gain for the "suggester" group measured both by the median and the mean for retention. In each case Mr. Twohig reports organization of subject matter to be superior in the case of the "suggester" group to that of the "non-suggester" group.

In all of the experiments reported above the experimenters worked with a superior and an inferior group, judged on the basis of intelligence tests and simple preliminary tests in the field to be studied by the classes used in the experiment. In every case the inferior group was the one selected to use the suggesters. In all cases the tests were conducted for too short a period to permit of the drawing of final and definite conclusions as to the efficacy of suggesters. Nevertheless, the results of these and many other experiments in other fields pointed to a strong probability of the superiority of the suggester method over the conventional methods with which it was contrasted.

In the department of history two experiments have been carried on over a brief period in seminary classes under the direction of Doctor Yocum by Miss Laura Barth, at the time teaching in the Stetson Junior High School, this city; and Mr. Stanley J. Folmsbee teaching in the Smedley Junior High School, Chester, Pa. Miss Barth used suggesters in connection with her history teaching for the purpose of developing vocabulary in 7A Colonial History. She reports a gain of from five to twenty per cent. in new terms learned by her experimental group over those acquired by the control group. Mr. Folmsbee's experiment was undertaken to follow up Miss Barth's work and to establish the validity of her results. He differentiated from her experiment by a more extensive use of conspicuous labeling by means of pictures, charts, and appropriate samples or relics used in connection with his history teaching. In other words, Mr. Folmsbee's specific purpose was to find out if a conscious attempt to build up the usable vocabulary of the student would result in his being able to write a more complete and better organized discussion of an assigned topic in the history studied at the time.

The experiment was conducted under carefully controlled conditions with two 7A junior high school classes for a period of five weeks. After a careful investigation into the relative intelligence of the two groups, the weaker section was used for the experimental teaching, the stronger section being used as the control group. The one variable being training in vocabulary, the same method of instruction was used with both classes and included class discussion, questions, problems, and reports, with the addition in the case of the experimental group of a conscious effort to enlarge the vocabulary of the pupils.

In teaching the experimental group the word suggesters used were the various peoples of Colonial History, with the key-word, s-i-f-t-e-d, to suggest *Spanish, Indians, French, Temporary Visitors, English,* and *Dutch;* and also the terms, *Dress, Doings* (of people and to them), and *Mater-*

ials and Implements (used in doings, products, and results).

One serious disturbing factor in the conduct of the experiment was the occurrence of several interruptions to the work with the experimental group by reason of special assembly programs during Boys' Week, Music Week, and Health Week which did not affect the history schedule for the control group. The exact discrepancy in the number of lessons given the groups, however, is not reported.

At the close of the experiment a final test was given in the form of a 20-minute written discussion in class of the topic, "Colonial Life." The papers were graded, it is reported, according to "completeness, or the number of words written, and organization." Attention was also paid to the number of words included which the experimental group had been learning.

In connection with examining the papers for the number of words written in each, Mr. Folmsbee makes the following questionable statement:

> "If we assume that each word written stood for an idea and that these ideas, for the most part, were correctly stated, then it is clear that the experimental group had many more facts at their command in comparison with their ability than the control group."

The implication that a great number of words is an indication of a corresponding increase in the number of facts at the pupils' command has neither pedagogical nor psychological basis.

From the standpoint of organization the report states that the members of the control group showed scarcely any instances of anything more than the mere setting down at random of their thoughts as they occurred to them, while forty per cent. of the experimental group tried to organize their material around the suggesters which they had been trained to use.

As evidence that the vocabulary of the experimental group had actually increased beyond that of the control group, the report states that "there were a large number of

terms, such as *flail, trencher, pestle, candle-dipping,* etc., which were frequently included by the experimental group but which did not occur in the papers of the control group at all.

The report concludes from the results of the experiment that in spite of very severe handicaps to the successful employment of the method mentioned above, a very inferior group of pupils was brought up by means of vocabulary training by the use of suggesters to at least the level of the group which was admittedly of much greater ability.

In reporting this experiment there is no intended implication of conclusive evidence of a definitely measurable degree of superiority of the suggester method over the usual method employed in teaching Colonial History to young children. The results of the experiment do suggest, however, the probability of superiority, and the writer's experiment under more carefully controlled conditions and for a longer period of time is undertaken as another step in an inquiry that will doubtless involve a long series of experiments, of which these are mere beginnings, into the validity of the suggester method in the teaching of American History.

The following are the suggesters used in this experiment in the teaching of American History. These were introduced gradually.

I. CHARACTERISTICS (Key word: P-R-I-M-E)

P eople (Key word: S-I-F-T-E-D)

S panish
I ndians
F rench
T emporary visitors
E nglish
D utch

R Feelings of and about people
I Realizations and beliefs
M Likes and dislikes
E Motives and standards

R elationships

C ontacts

(Connections and Cut-offs)

C ommon interests

(Co-operations and Conflicts)

I ssues

C ontrol (Key word: C-L-I-P)

C ompulsion
L aw
I nfluence
P ublic opinion

M ovements (Key word; D-R-I-V-E-S)

D emocratic growth
R eligious advancement
I ndustrial and economic changes
V entures and enterprises
E migration and immigration
S ocial betterment

E vents

Chronological order

II CELEBRITIES

III. CHANGES

IV. CONTRIBUTIONS

PRINCIPLES UNDERLYING THE USE OF SUGGESTERS

While it was not the part of this experiment to select and arrange the particular suggesters here used, a careful examination of these suggesters will show their conformity to four general principles. These are the principles that Doctor Yocum's previous experiments indicated as essential to their most efficient use, and are as follows:

1. General inclusiveness and varying suggestiveness
2. Retainability, either through

a. Limiting the number to be memorized (resorting to associated sub-suggesters where necessary)
b. Retainable form, i. e.,
    1. Similarity of form (alliteration, etc.)
    2. Familiarity of sequence
c. Cumulative memorizing and review

3. Suggestive form (Employment of key words)
4. Practice in their use.

General Inclusiveness

An examination of the suggesters listed on pages 11 and 12 will show that several of these principles are involved in most of them. Thus, the four main suggesters, *Characteristics, Celebrities, Changes* and *Contributions* are so general in their suggestiveness as to be applicable to any period or epoch of history; in other words, they are general and all-inclusive in their range. At the same time, these, as well as all the rest of the suggesters, will carry with them a varying suggestiveness for different individuals. Thus, the child using them will find new associations for them each day he adds to his store of knowledge about any period of history each time he sees these suggesters in the light of a new experience, such as the reading of a story bearing upon a given period, the examination of a picture bearing upon the life of that time, or the picturization of the epoch upon the moving picture screen.

Retainability.

It is important that the selection of suggesters be limited to those that are easily retainable. This implies, first of all, that their number must be limited to the minimum memory span of normal children of the 7th grade. It is also important that their *form* be such as to make them readily retainable. This can be achieved through selecting suggesters that have a certain similarity, or that follow a fam-

iliar sequence. The four main suggesters mentioned above fill these requirements, being limited in number, and alliterative; all begin with the letter "C." In fact, they are designated as *The Four Big C's.* An example of the employment of a familiar sequence is to be found in building up associations about the people of a certain period. Here the terms, *Dress, Homes, Occupation,* might serve as sub-suggesters. Differently stated, the suggesters might be, *How they dress, How they live, How they work. Dress* might be further associated with *Head-dress, Clothing,* and *Footwear, etc.*

Cumulative Memorizing.

Probably the most important means of making any set of suggesters retainable is through cumulative memorizing and review. This is done by making clear the general meaning of each of the four principal suggesters—*The Four Big C's.* Then the sub-suggesters under the first principal suggesters are taken up and work is thus continued down through the list. The introduction of sub-suggesters must be made very gradually to prevent confusion with the chief suggesters, and review of each group must carefully avoid taking it in isolation from the principal suggester under which the group falls. In other words, the whole method must be pursued in reviewing suggesters from the Four C's down through sub-suggesters and sub-sub-suggesters. This review, of course, must be frequent enough to make recall of the entire list practically automatic.

Suggestive Form.

Even the form of the word or idea can be made highly suggestive. This is best achieved through the use of key words, used either alone or with a completing statement. For instance, reference is made to the *prime* chaaracteristics of a certain period. The word *prime* besides suggesting

an emphasis upon the chief, or most important, or outstanding features of a period, serves as a key word to call to mind a consideration of the

P-eople concerned in the period to be studied, their
R-elationship with the mother country
with other colonies in Colonial History
with the Indians
I-ssues, which may eventually develop into well defined
M-ovements in thought and practice. These in turn frequently culminate in
E-vents.

While this may not always be the absolute sequence in every historical development, it furnishes a useful form for preliminary presentation.

Practice in use.

The last precaution to be observed in teaching by the use of suggesters is to make sure that children have adequate practice in using the suggesters. This involves, first, practice in a discriminating selection of the facts presented by the text book or source of information and in associating them with the proper suggesters. The object of this procedure is to effect an organization of the significant facts of history in such form as to make them readily recallable.

PROCEDURE IN THE PRESENTATION OF SUGGESTERS

The four big "C-words" are placed on the board, one at a time, and in their proper order. Each of these is discussed, illustrative sentences being given by the pupils and teacher, until the teacher is certain that the correct concept of the meaning of each word has been acquired. The words are then examined to see if they have any bearing upon history. The teacher calls to mind stories of leaders and of great events taken from the lower grades. The children

find little difficulty in identifying such personages as Columbus, John Smith, William Penn, etc., as celebrities. The outstanding qualities of these great men that made their achievement possible—daring, courage, indomitableness—the children recognize at once as their characteristics. The new ideas, conceptions, attitudes, that followed in the wake of the undertakings of these leaders are quickly seen as changes. The things these leaders and their associates and followers did at such great risk and cost are readily recognized as contributions to the progress of mankind. The four suggesters themselves are powerful in their suggestiveness of what children should look for in the study of their history. They give direction, or motivation, to their study.

The first three lessons in 7th grade history concern themselves with the geographical characteristics of the North American continent, to the type of coast line, of the rivers, the mountain barriers, and their natural passes. When the study of the first English settlements is introduced, a new slant is given to the term *Characteristics.* Here the key word *Prime* is introduced to indicate a concentration upon the chief, or most important, attributes of the Jamestown colonists that made them stand out through history as individual and distinct from all the other groups of colonists. This takes the class to a consideration of the principal, or *prime* things that have to be considered—*People*, and their relationships. *People*, conditioned by *Relationships* raise *Issues*, and engage in *Movements*, which frequently culminate in *Events.* In the course of all this development *Celebrities* arise, *Changes* take place, while all have as their outcomes *Contributions* to civilization and democracy.

These are the only suggesters employed until the 15th lesson, when the history of Pennsylvania is introduced. Here the sub-suggester, *Sifted* is introduced under *People* as a guide in keeping in mind all the groups of people that made up our Pennsylvania colony:

S wedes (also Scotch-Irish)
I ndians (already in possession of the land)
F riends (both English and Welsh)
T eutons (or Germans)
E nglish (non-Quaker)
D utch

The sub-suggesters *Feelings of* and *Feelings about* are made emphatic in considering *People.* As Mace points out in his "Methods in History," thoughts and emotions make up the inner essence of history, of which action constitutes but the outward form. The feelings *of* the people under discussion should be classified by pupils as (a) explaining conditions and events, and (b) resulting in events and movements, and (c) as changed by events and movements. A consideration of feelings *about* people has as its object the making of the pupils' feelings toward peoples correct and just. Modern feelings toward the past and toward strange and foreign people of the present is erroneous and unjust chiefly through failure to realize the feelings which controlled, and continue to control, the acts of historic as well as of modern people.

When teaching the struggle for colonial empire between England and France, the sub-suggester, *Contacts* is introduced under *Relationships.* This is association by contiguity through a consideration of political and geographical connections and cut-offs. These associations can be brought about through the use of maps in which these political and geographical connections and cut-offs are made conspicuous. For example, the territory occupied by the Iroquois can be clearly visualized as cutting off New England from the French, Lake Champlain as connecting them, the Great Lakes as connecting New England with the fur fields of the Northwest, the Appalachian mountains as cutting off the English colonies from the Southwest, etc., etc.

The second suggester under *Relationships* is *Common Interests.* This is association by similarity, and under this heading is considered *Co-operations* and *Conflicts* among people.

In the 7B grade, when entering upon the study of the Revolutionary War, the sub-suggester *Control* is introduced under *Issues*, which has as its key word *Clip*, since control is exercised over people and over territory through *C-ompulsion, L-aw, I-nfluence* (of or by) and *P-ublic opinion.*

Under *Movements* the key word *Drives* is introduced to suggest the driving forces in the feelings of people, affected by their growth in knowledge and their powers of leadership, that manifest themselves as *Movements.* The key word further suggests *D-emocratic growth, R-eligious advancement. I-ndustrial and economic changes, V-entures and enterprises, E-migration and immigration, and S-ocial betterment.*

PSYCHOLOGICAL BASIS FOR THE USE OF SUGGESTERS

Frank Cramer, in his admirable "Talks to Students on the Art of Study," points out the importance of the right attack upon information as follows:

"To my thinking, the student's most critical experience with any piece of knowledge is his first contact with it. What he does with it then determines forever its usefulness to him. If he takes the time to associate it at once with as many other related facts as possible, if it is made a part of a well-knit, valuable group of similar facts, it will forever be his faithful servant. Memory will find it no burden, because it is associated with its like, attention will hover over it, interest will cling to it for the sake of its associations. It will yield itself readily to the uses of reason, because, by being associated with related facts, it is in a position to corroborate the truth they have to tell."

The suggesters used in this experiment have been devised with the express purpose of providing the kind of attack above referred to by furnishing a means by which the most useful associations, from the standpoint of their historical significance, out of the thousands of associations that might suggest themselves, may be built up at the outset of the pupil's study of American History.

It will be seen that these suggesters utilize the laws of association by contiguity as well as by similarity. The recall of the suggesters in their proper sequence depends upon the law of contiguity, and the recall of the first associations built up about them is controlled to a large extent by this same law. However, if this were the only part of the law of association that operates here, the use of suggesters would be of little value, for no matter how greatly a mind may be gifted in its power to reproduce items of knowledge and experience in the order in which they were first met, it will always remain the "commonplace, prosaic, encyclopedic mind," unless it is also capable of rearranging knowledge in the order of reason; i. e., that order in which the higher activities of the intellect can be brought to play upon it.*

The form of the suggesters was decided upon in order that they might serve as reminders of the natural relationships of the associations suggested by them. It is the appreciation of the relationship of associations that gives meaning and substance to the facts to be recalled, and it is therefore this phase of the use of suggesters that needs the most careful attention on the part of teacher and student alike.

COMPARISON OF SUGGESTERS WITH TOPICAL OUTLINES

After a consideration of the advantages that might be anticipated from the use of the suggesters under consideration as compared with the use of the topical outline, the following merits tentatively suggest themselves in favor of the suggesters:

1—*Simplicity.* This set of suggesters remains the same for all periods of American History. In using topical headings, on the other hand, the pupil must remember a new set of headings for every section of history to be studied.

*"Talks to Students on the Art of Study"—Frank Cramer.

2—*They stimulate,* by virtue of their very form and sequence, *an inquiry into humun relationships, feelings, and motives that lie back of established American institutions.* Topical headings, varying as they do with each period of history, and being therefore more difficult to retain, are not so certain to furnish such reminders.

3—*Emphasis upon essential causes and outcomes inherent in the form of the suggesters.* Children in relying upon these few simple suggestive reminders work with significant factors rather than unimportant incidents in the whole historical development.

In other words, the writer had reason to believe the suggesters capable of being utilized for developing a wide range of associations, and at the same time limiting these associations to what is significant in history.

SELECTION OF LABORATORY FOR EXPERIMENTATION

The experiment was conducted in the John Paul Jones Junior High School at Tulip and Ann streets, Philadelphia, Pa., by the writer, the principal of the school, with the permission of the district superintendent, Mr. Henry Roberts. It was conducted with what were known as 7A-3, 7A-4, 7A-5, and 7A-6 classes during the term beginning February 1st, 1925, and continued until the end of December, 1926, i. e., through 7-A, 7-B, and 8-A, or three school terms. In September, 1925, four more classes were started out in the same experiment, these being known as 7A-2, 7A-3, 7A-4, and 7A-5 respectively. A further group, consisting of two paired classes, was added to the experiment September, 1926. The first, or February, classes will henceforth be known as the A Groups, the second, or September, 1925, classes as the B Groups, and the third, or September, 1926, classes as the C Groups. The B groups were added to the original experiment for the purpose of measuring results with new groups after certain slight variations had been

made in procedure in the light of experience gained with the A Groups. As in the case of the A Groups, the experiment with the B Groups was carried on for three school terms. In the case of the C Groups, the experiment was conducted one school term.

The Teachers.

The teachers in charge of the classes in the A and B Groups were Miss Dorothy Wardle and Mr. Howard McComb. Miss Frances K. Maguire was the teacher of the C Groups. These instructors were selected to teach the groups involved in this experiment because they were judged by the writer to be

(1) Good teachers of about as equal ability as could be found among the five history teachers available when the experiment was begun.

(2) Intelligent in their recognition of the need of observing the fundamental principles of experimental procedure, and therefore capable of co-operating with the experimenter in both letter and spirit.

(3) Possessed with a scientific attitude of mind, and therefore

(4) Professionally and not personally interested in the results of the test.

In addition to the above, Miss Wardle had taken Doctor Yocum's course in Education Objectives and Outcomes, and was familiar with the use of suggesters both through study and class-room practice.

The writer's judgment of the teaching ability of these persons was based upon her observation of their work during the first term of their teaching experience in the school. Their intelligence with regard to the observance of the fundamental precautions necessary in conducting any scientific experiment has been demonstrated by their interest in acquainting themselves with scientific experimental methods through special university courses and in the gen-

eral conduct of their class-room work. Their scientific attitude of mind is also evidenced by this interest as well as by their readiness to depart from their accustomed method of teaching to undertake the present experiment in the interests of advancing their work in spite of the additional time and labor involved in working out a new procedure. Miss Maguire, moreover, had had experience in teaching 7A history classes by the contrasted suggester and topical methods during the term previous to the C Groups' advent into the school.

The above-mentioned precautions are in conformity with those outlined by Ambrose L. Suhrie in his "Inductive Determination of Educational Methods" (p. 36).

The School.

The school in which the experiment was conducted is one of the two most recently constructed junior high schools in Philadelphia, having been organized October 1st, 1924. This building is generally conceded by authorities on junior high school construction to be almost ideal with regard to conditions of heating, lighting, seating, and equipment. Three sizes of desks in every room insure comfortable seating of large and small pupils alike.

Both Miss Wardle's and Mr. McComb's rooms were located on the west side of the building on the third floor. Mr. McComb's was a corner room, having windows on two sides, and it was usually about one degree cooler than Miss Wardle's room next door. Miss Maguire's room was located on the north side of the building on the second floor. The temperature in all the rooms in the building is thermostatically controlled and maintained at about 68 degrees F. The ventilation is as nearly ideal with respect to humidity and circulation of fresh air as is possible in an up-to-date system of internal ventilation.

The physical conditions, therefore, under which the experiment was conducted were fairly equal and, on the whole, quite satisfactory. The same text book was given

the pupils in both the experimental and the control classes in the A, B, and C Groups, Gordy's "History of the United States" being used in 7A, 7B, and 8A grades, and Burnham's "The Making of Our Country" being used as a supplementary text in 8A classes.

The Student Body.

The student body was largely American born, with only 4.1 per cent. * pupils of foreign birth. However, 48 per cent. of the children came from homes where one or both parents were of foreign birth, 14.1 per cent. of these being of Polish parentage. The majority of the fathers were laborers, mill workers, and small shop owners, with a minimum of educational equipment. A large proportion of these remained unconvinced of the need of keeping their children in school beyond the legal working age of 14, as is attested by the fact that during the term from September, 1925, to February, 1926, three hundred twenty-three, or 17 per cent. of all the children in the school under 16 years of age left school to take "jobs," and a further total of 91 withdrew from school before the close of the term upon becoming 16 years of age, the legal "leaving" age whether the child is employed or not. Thus it may be seen that a "working" tradition still prevailed in this district at the time of this experiment. In many of the families from which the children came the mother as well as the father was regularly employed in some gainful occupation away from home.

Classes Selected for Experimentation.

On page 20, under "Selection of Laboratory for Experimentation" reference was made to the A and B Groups concerned in this experiment. The procedure observed in the determination of the experimental and control classes in the A Groups and the results of the final tests given these Groups are described in Appendix A. The following discus-

*Figures based on March, 1926, School Census.

sion is confined to a consideration of the B Groups begun September, 1925. The B Groups comprised what were then designated as 7A-2, 7A-3, 7A-4, and 7A-5. The number designation of each section indicates its standing among the eleven 7A classes then in the school in accordance with the I. Q. scores determined by the Philadelphia Intelligence Test. The highest section, 7A-1, was not included in the experiment because the difference in I. Q. range and median between this and 7A-2 was greater than that noted between the succeeding classes. The rankings of the four B sections indicated above were as follows:

PHILADELPHIA INTELLIGENCE TEST I. Q. SCORES

Class	No.	Range	Q 1	Median	Q 3	Q Value
7A-2	39	105-115	109.2	111.1	112.3	3.1
7A-3	39	101-109	103.3	104.4	106.5	2.1
7A-4	33	96-102	98.5	99.5	100.7	2.1
7A-5	30	92-97	94.6	94.6	96.6	2.0

According to these rankings 7A-2 is superior to 7A-3, and 7A-4 is superior to 7A-5.

Preliminary Tests.

In order to substantiate these findings as to rank, the Illinois Examination II for Grades 7, 8, and 9 was given to all groups. This, it will be recalled, is a battery of seven tests for the determination of general intelligence. The second part of the test, dealing with arithmetical operations, is not included in the scores listed below. The reason for disregarding the results of this test for the purpose of this experiment is that it is confined entirely to fundamental arithmetical operations in addition, subtraction, multiplication, and division of integers and fractions. Simple problems involving reasoning and arithmetical ingenuity are included in the test for general intelligence above mentioned. The results are as follows:

SCORES FOR ILLINOIS INTELLIGENCE EXAMINATION II

SCORES

Class	No.	Range	Q 1	Median	Q 3	Q Value
7A-2	39	90-130	104.6	112.1	115.8	11.2
7A-3	39	85-131	98.8	105.8	112.3	13.5
7A-4	33	74-124	100.5	105.5	109.	8.5
7A-5	30	78-124	92.3	100.	108.3	16.

These results substantiate the original ranking in accordance with the Philadelphia I. Q's.

In order to determine how the groups compared with regard to the initial fund of facts bearing upon the Colonial period, the test in Appendix D, entitled "Preliminary Test in Colonial History," was given on September 14, 1925. It will be seen that the test bears specifically upon the leading facts to be taught in connection with the suggesters, and was intended for use at the end of the term as well, in order to measure the relative gain in the history learned and remembered by the experimental and control sections. The initial giving of the test was scored on the basis of 100 per cent., with the following results:

RESULTS OF PRELIMINARY TEST IN COLONIAL HISTORY

(See Appendix D)

SCORES

Class	No.	Range	Q 1	Median	Q 3	Q Value
7A-2	39	8-42	22.9	26.5	30.6	7.7
7A-3	39	10-38	17.4	24.8	30.4	13.0
7A-4	33	8-38	19.6	25.8	29.4	9.8
7A-5	30	6-39	16.5	22.	29.5	13.0

By all three of the foregoing standards it will be seen that 7A-2 was superior to 7A-3 and that 7A-4 was superior to 7A-5. In accordance with the procedure followed in experiments conducted in seminary classes conducted at the

University of Pennsylvania under Doctor Yocum, the weaker groups, 7A-3, and 7A-5, were selected as the experimental groups, and 7A-2 and 7A-4 were used as the control groups. Each teacher, then, had one experimental and one control class.

From the standpoint of nativity and parentage, the classes are as follows:

NATIVITY

Class	Total No.	Foreign Born Children		Foreign Born Fathers	
		No.	Per cent.	No.	Per cent.
7A-2	39	4	11.1	18	46.1
7A-3	39	0	0	13	33.3
7A-4	33	2*	6.0	15	45.4
7A-5	30	0	0	15	50

* One of these children was born in Canada, and therefore was not confronted with language difficulty in this school.

From the standpoint of nativity it appears that the 7A-2 section was at a disadvantage in comparison with the 7A-3 class, and that 7A-4 compared favorably with 7A-5, if we assume language difficulty in homes with foreign-born children and parents.

RETENTION TEST (Appendix C)

(Highest possible score, 17)

SCORES

Class	Number	Range	Median	Mean
7A-2	39	5—17	14	12.8
7A-3	39	8—17	14	13.
7A-4	33	6—16	12	12.
7A-5	30	5—17	13	12.

From the standpoint of retention there is little difference to be noted between 7A-2 and 7A-3 nor between 7A-3 and 7A-4.

It should be noted in connection with the preliminary tests that the scores of only the pupils who remained in the classes until the end of April, 1926, were considered. This was done in order that there might be no question as to the relative standing of the experimental classes and their control classes by reason of withdrawals from any of these groups during the course of the experiment.

Equivalency of Groups

Attention should also be called to the fact that in recording the number of pupils in the results of the above preliminary tests only such pupils as took all three; i. e., the Philadelphia Intelligence Test, the Illinois Intelligence Examination, and the Preliminary Test in Colonial History were considered. This precaution was of course necessary in order to make the comparison of the groups valid.

Details of Procedure.

Throughout the entire experiment frequent conferences were held by the writer with the teachers in charge of the classes concerned in the experiment for the purpose of working out lesson plans for the "suggester" (experimental) groups and outlines for the control groups. The lesson plans and procedure were checked up to assure the observance of the proper precautions in the conduct of the experiment. The most important of these were:

1—Avoidance of placing more emphasis upon essential points taught the experimental classes (outside of that naturally involved in the use of suggesters).

2—Avoidance of the use of the particular suggesters employed by the experimental classes when outlining and teaching the same history to the control classes.

3—Checking up the progress of the experimental and control classes to determine

a—Whether the experimental or "suggester" method took more or less time than the outline method pursued with the control classes.

b—Whether the same ground had been covered by both experimental and control classes by the end of the experimental period.

These precautions were all necessary to preserve uniformity of procedure, with the presence of but one variable; i. e., the use of suggesters in teaching the experimental classes.

It should be noted here that the experimental classes in all three groups made slower progress at the beginning of the experiment than the corresponding control classes. For the first month the control sections were about one lesson (i. e., from three to four days) in advance of the experimental groups, but before the end of the seventh week the experimental classes had made up the time lost in learning how to use the suggesters.

There are but three 45-minute periods assigned to History and Civics a week, one of these being given over to the study of Civics. This leaves but two periods for History, which, after making allowance for time consumed in change of classes at the end of each period and such incidentals as the taking of the roll, etc., leaves about 38 minutes per period, or 76 minutes per week for History. This is considered inadequate time in which to cover the Philadelphia course of study in History, and frequently the Civics lessons are curtailed or omitted so as to complete the History. Miss Wardle, Mr. McComb, and Miss Maguire reported that they were obliged to appropriate six of these Civics periods during the first term for the A, B, and C Groups, and five during the second term of the A and B Groups.

Presentation of Material of Instruction.

Sample outlines illustrating the organization and development of topics in 7A, 7B, and 8A History by the Suggester Method will be found in Appendix E, while outlines used by the control groups will be found for the same period in Appendix F. The method followed in teaching the experimen-

tal groups by the use of suggesters has already been described under "Procedure in Presentation of Suggesters" on pp. 15-18. In the control sections the associations were developed by means of an outline. The 7th grade, it should be noted, is the first in which the outline is definitely developed. Therefore, it is necessary at the beginning, and practically throughout the 7A grade, to supervise very closely the making of the outline.

With all three of the groups the initial lessons were supervised study lessons for the purpose of teaching the children the proper attack upon their history, which now for the first time must be studied as an organized whole from the cause and effect standpoint. In the control groups the salient facts were represented in outline form. In both the control and experimental sections the text was read first, a summary made in the children's own language, and then the ideas presented by the text were identified with the suggesters in the case of the experimental groups. In the control groups the ideas were set down in brief outline form, care being exercised to have the children recognize the most significant ideas and set them down as their main headings. Next, the related ideas were given and briefly summarized under the appropriate headings. These associations proceeded step by step, the teacher placing the outline on the board as it was being developed, and the children writing it in their note books. Before the end of the period the lesson was read over once more and the outline checked to make sure that no significant ideas had been omitted. A brief summary was then given by some member of the class, followed by the teacher's review and emphasis upon points likely to be overlooked. In the experimental classes the same procedure was followed, except that the outstanding facts and ideas were associated with the appropriate suggesters, the suggesters having been previously reviewed and placed on the board with room left for the insertion of the proper facts as they were developed in the class discussion.

In teaching the experimental and the control groups the aims outlined in the Philadelphia course of study in History were definitely kept in mind. These are the following:

1. To give a common basis of historical knowledge in order that there shall be a common understanding as to the meaning of our fundamental institutions
2. So to interpret this heritage as to arouse an enlightened patriotism that is distinct from national vainglory
3. To give the pupil a sense of contact with people of many types, thus gaining wide social experience and fitting himself for a better understanding of his fellow man.

The classes concerned in this experiment were scheduled so as to avoid the first period on their assembly days in order to prevent the possibility of prolonged assembly periods from encroaching upon the history period and thus entering into the problem as a disturbing factor.

THE RESULTS

At the beginning of the term the B groups were given the Preliminary Test on the Colonial Period (Appendix D) to determine the extent of the information these children brought to their first term of American History. These results have already been reported on page 25.

At the end of the term the same test was given again to measure the relative gain after the study of this period of history for one term. The results are as follows:

RE-TAKING OF PRELIMINARY TEST ON COLONIAL HISTORY
(Appendix D)

Groups	No.	Range of Gain in Scores on 100 per cent. basis	Per cent. Gain Median	Mean
Experimental	69	3—54	27	26
Control	72	3—45	24	23

Here the experimental groups show a slight gain over the corresponding control groups.

The term grades for the two groups based upon the results of about four written tests a term[1], together with the

1—See Appendix M for samples.

teachers' judgment of the relative worth of the children's daily class discussions and recitations, note books, and special reports, are offered here for what they may be deemed to be worth as corroborative of the results of the more objective tests reported.

FINAL GRADES AT CLOSE OF 7A TERM, JANUARY, 1926

Groups	E's		G's		F's		P's		Total
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	
Exper.	7	10 p.c.	21	31 p.c.	37	53 p.c.	4	6 p.c.	69
Control	3	4 p.c.	16	22 p.c.	51	71 p.c.	2	3 p.c.	72

If, therefore, we regard the results from the standpoint of the teachers' judgment, the experimental groups show 12.9 per cent. more grades above the passing grade of F, and 3 per cent. less failure than the control group.

FINAL GRADES AT CLOSE OF 7B TERM, JUNE, 1926

Groups	E's		G's		F's		P's		Total
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	
Exper.	4	6 p.c.	13	20 p.c.	44	63 p.c.	8	11 p.c.	69
Control	2	3 p.c.	12	16 p.c.	51	71 p.c.	7	10 p.c.	72

Here we find 4 per cent. more G's and E's and 1 per cent. less of failure.

In order to determine whether the experimental groups were using the suggesters in the organization of the facts presented by their history, two special tests were given at the end of the 7A term. The same difficulties confronted us here as in the case of the A Groups who were tested similarly at the same time, but upon questions bearing upon 8A History; i. e., the questions dealt with periods studied early in the term, and the children had not been warned of

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1—E=90—100
G=80— 89
F=70— 79
P=Less than 70, or failure.

the need of reviewing the periods in question. A second difficulty was due to the fact that the children seemed aware that their term marks had already been reported to the office, and consequently they did not do their best with the tests. A third drawback lay in the fact that this was the first time the children had been confronted with such general questions, and their evident discouragement in the face of the unusual situation was another factor that hindered their working with these questions to the best of their ability.

The questions given in these tests were as follows:

GENERAL TEST I

1—a. Name the various peoples who lived in North America at the end of the 18th century.

b. Tell which of these people came from Europe and tell why they came to America.

2—Name a prominent leader of each of these groups and the event with which he is associated.

3—Which group of all of these people were the best colonizers, and why?

GENERAL TEST II

Tell all you know about the settlement of Pennsylvania.

According to the teachers' marks for Test I, 31.3 per cent. failed in the control group and 18.1 in the experimental, showing a gain of 13.2 per cent. for the experimental group. In Test II, 29 per cent. failed in the control group, whereas only 25.5 failed in the experimental classes. Here the gain for the experimental group is not so large as in the case of Test I, being but 4.5 per cent.

Organization

From the standpoint of organization shown in the answers to the questions in Test I, 44.6 per cent. of the papers of the experimental group bore evidence of organization around the suggesters, whereas in the control group only 7.5 per cent. of the papers were organized in Test I.

In Test II, 28.2 per cent. of the experimental group papers were organized, whereas only 7.5 per cent. of those in the

control group showed any evidences of attempts at organization.

Re-scoring of Tests

As a check upon the teachers' markings of the above tests, the writer re-scored the first question in Test I on the basis of the number of correct relevant facts given in the answers. Out of a possible 10 facts, the median for the experimental group was 5 as against 4 for the control group, being a gain of one fact in 10, or 10 per cent. for the experimental group.

Test II was scored in its entirety in the same manner, with the following results:

RESULTS OF TEST II SCORED ON BASIS OF NUMBER OF FACTS

Groups	Number of correct facts				Papers showing organization	
	No.	Range	Median	Mean	No.	Per cent.
Experimental	69	1—44	15.6	16.5	47	68.1
Control	72	2—45	11.8	13.2	6	8.3

Thus, it will be seen here that the gain for the experimental groups from the standpoint of retention is 3.8 facts out of a possible 47,or 8.1 per cent. From the standpoint of organization, however, the experimental, or suggester, groups are 60 per cent. better than the non-suggester groups.

To illustrate how much better scores are derived from the type of test that requires no organization on the part of the children's answers, the results of a true-false test on the Pilgrims and the Puritans, given at the end of the lessons on the New England colonies, are given below:

RESULTS OF TRUE-FALSE TEST ON PILGRIMS AND PURITANS (Appendix H)

Groups	No.	Range of scores 100 p.c. basis	Median	No. scoring over 68 p.c.
Experimental	69	20—100	72	68.1
Control	72	0— 84	52	21.4

From the standpoint of the number of correct facts at their command as revealed by this type of test, the experimental groups show decided superiority over the control groups. However, this type of test offers no opportunity to indicate any organization of the facts recognized as correct.

The A and B experimental groups were both tested on March 23, 1926, for their knowledge of the suggesters. The papers written by the A groups showed a labored and imperfect knowledge here, and it was evident that they had not been careful to study the sub-suggesters in relation to the main suggesters. The B groups, on the other hand, showed an almost automatic recall, the suggesters and the sub-suggesters being almost invariably given in their proper sequence and relationship. This accounts, to a large degree, for the superior progress made by the experimental classes in the B Group as compared with those in the A Group.

A second reason for the superiority of the B experimental over the A experimental group is that the presentation of the suggesters was made more slowly, and therefore with more thoroughness, in the case of the B Group as a result of the experience with the A Group. The number of suggesters was moreover reduced to 19. It also had been clearly evident that sufficient review of the suggesters had not taken place with the A Group, and therefore the work with the B Group proceeded by gradual stages, and with daily review of the suggesters learned until the children could recall them as readily as they could repeat the multiplication tables.

TEST FOLLOWING CLASS ROOM STUDY PERIODS

During the third week in April the A and the B Groups were required to do their studying and outlining from their text books in class. The A Groups were studying Jackson's Administration, and the B groups the closing campaign of the Revolutionary War. The teachers gave no help while the children were outlining and studying the work, three

forty-five-minute periods being given over to the task. On the fourth day the teachers summarized the lessons and gave help in correcting the children's outlines in both experimental and control groups.

An examination of the outlines for the B group showed good topical outlines in the control classes, and good organization of facts about the suggesters by the experimental classes.

On the fifth day, without previous warning or preparation, the classes were tested on the work just completed by being asked to write on the question, "Tell all you know about the Campaign in the South and the close of the Revolutionary War."

The papers were scored on the basis of the number of correct relevant facts expressed. They were also examined for organization. The results are as follows:

TEST ON THE CAMPAIGN IN THE SOUTH

			Number of Correct Facts		Papers showing organization	
Groups	No.	Range	Median	Mean	No.	Per cent.
Experimental	69	0—47	12.3	14.2	40	58.
Control	72	0—36	7.8	8.3	17	23.9

Thus, from the results of five different tests given at varying intervals during the course of the experiment and ranging from the relatively simple true-false type to the more unusual "general" type of question used in Test II noted above, the experimental classes under consideration show a gain over the corresponding control classes. This gain is noted both from the standpoint of command of the facts retained and of organization of those facts. These results were further corroborated by the judgment of the teachers as reflected in the grades given the pupils at the end of the 7A term and at the close of the second report in 7B.

As the results of this experiment for the third term are

essentially the same as those above reported for the 7A and 7B terms, they are not given here in detail.

When it is remembered that the experimental classes were the weaker groups, the gain seems the more significant, and is greater than is apparent from the figures noted in the results above recorded.

GROUP C

This part of the experiment with suggesters dealt with two classes beginning their American History in the Jones Junior High School in September, 1926.

PRELIMINARY TESTS

The classes were made up of paired groups of 44 each chosen from 150 pupils rated with the highest intelligence quotients, according to the Philadelphia Group Test of Mental Ability, in the entire 7A section of the school. These 150 children were further tested by the Otis Classification Test, Form A, and the Thorndike-McCall Reading Scale. The resultant average composite I. Q. was used as the basis for pairing the groups, the two classes being made up of the 88 children having the highest composite I. Q's of the entire 150 originally tested. In making up these two classes the aim was to have each child in the one section paired with a child in the other class having the same composite score.

The writer's attention has been called to the fact that a more scientific basis for pairing these groups would have been by the composite rank order, rather than the composite I. Q. for the three tests considered. When the scores for the 150 pupils were re-arranged according to composite rank order there were but three displacements among the 88 originally ranking highest according to the composite I. Q's. As the experiment had already progressed with the groups arranged as first indicated, the original grouping was allowed to stand.

EQUIVALENCY OF GROUPS

When the composite I. Q's were totaled for each class,

there was but 5.4 per cent. difference in the totals for the two classes, or .1 per cent. average per pupil, a negligible difference. The group having the higher total was arbitrarily chosen for the control group, and was known as 7A-3, while the other class, known as 7A-6, was taken for the experimental group.

A further analysis of the composite I. Q's for the two classes reveals the following:

RESULTS OF PRELIMINARY INTELLIGENCE TESTS

(Composite I. Q's)

Class	No.	Range	Q-1	Median	Q-3	Q Val
7A-3 (Control)	44	110—150.3	141.1	118.9	124.3	5.1
7A-6 (Exper.)	44	110—144.6	114.0	118.6	124.6	5.3

From the Q values, and the almost identical medians, Q-1's and Q-3's it will be seen that these groups were well matched pupils by pupil.

Pairing was adopted in this part of the experiment in order to eliminate as far as possible the factor of inequality between the groups tested, and as a check upon conclusions drawn from the results produced by groups of unequal intelligence.

The reason for using the two brighest classes in this part of the experiment was to determine whether children of superior intelligence respond more or less readily to the use of suggesters than children of inferior intelligence.

The preliminary test in Colonial History (Appendix D) was given the two classes with the following results:

PRELIMINARY TEST IN COLONIAL HISTORY

(Appendix D)

Class	Number Examined	Range	Q-1	Median	Q-3	QValue
7A-3 (Control)	44	11—54	25.7	30.5	34.	4.1
7A-6 (Exper.)	44	19—54	25.8	29.8	36.5	5.4

According to the results of this test, the Experimental class, 7A-6, appears to have a slight advantage over the control section from the standpoint of history background.

An investigation was made to ascertain the number of historical novels bearing upon the Colonial and Revolutionary periods claimed to have been read by the members of the two classes. The same information was sought with reference to the number of pupils who had seen any of the five historical pictures listed (Appendix G). The above, in order to determine the relative status of the two groups with reference to history background acquired through the children's voluntary reading and through their viewing of historical moving pictures. The following are the results:

READING OF NOVELS PERTAINING TO COLONIAL AND REVOLUTIONARY PERIODS

(See Appendix D for list of 61 titles submitted)

	7A-3 Control	7A-6 Exper.
Total number of different books read by various members of the class	23	35
No. reading 6 or more (highest No. read by any one pupil)	4	6
No. of pupils reading 5 books	1	1
" " " " 4 "	3	0
" " " " 3 "	0	3
" " " " 2 "	2	7
" " " " 1 "	4	5
" " " " none "	29	21

MOVING PICTURES

No. of pupils seeing all 5	0	0
" " " " 4	1	0
" " " " 3	2	2
" " " " 2	2	6
" " " " 1	10	13
" " " " none	28	22

From the standpoint of this type of background, it would

appear that 7A-6 had a slight advantage over 7A-3, the control group. Moreover, if their reading can be interpreted as indicating an interest in historical subjects, 7A-6 again takes the lead, 15 more pupils having read one or more of the books listed than in the 7A-3 class. It should be noted here that the children were asked at the time of checking books read to add any they had read that were not included in the list. About a dozen or more titles were added by the two classes, but none of these concerned the period under consideration, hence they could not be included in this summary:

NATIVITY

All children of both groups are American born. In 7A-3, the control class, 18 of the children came from homes where one or both parents are foreign-born, whereas in 7A-6, the experimental class, 23 of the children came from such homes. A further investigation into the language habitually used in the home showed that in each of these classes there were seven children reporting a foreign language as the language of the home. Thirteen in 7A-3 reported that the foreign language was "sometimes" used when the parents spoke to the children, this designation being applied when, according to the children's estimate, the foreign language was used half the time or less. Three children reported that the foreign language was never used except when there were visitors in the home who knew no English. In 7A-6 ten children reported that the foreign language was used only part of the time. From the above standpoint, therefore, there appears to be little difference between these two classes.

Moreover, inasmuch as the scores revealed by the Thorndike-McCall Reading Scale show no reading quotient below 96 for either group (that being in the control group), the language difficulty presented by some homes of foreign parents does not appear to be evident here. As a matter of fact, an analysis of the reading quotients for both groups shows the following results:

READING QUOTIENTS DERIVED FROM THORNDIKE-McCALL READING SCALE

Class	Number Tested	Range	Q-1	Median	Q-3	Q Val.
7A-3 Control	44	96.0—142	112.5	115.8	123.	5.3
7A-6 Exper.	44	100. —147	112.7	118.3	123.	5.2

If reading ability may be taken as a criterion, the foreign parentage in the groups here concerned is not a disturbing factor.

Summarizing, we may assume tentatively from the above results that 7A-6, the experimental class, is in a slightly more advantageous position with respect to interest in historical books, retention of historical facts learned in the earlier grades, and with respect to reading ability. The difference between the two groups, however, is too slight to account for any wide variation in results.

PROCEDURE

The same procedure was followed here as with the A and B groups, and previously described on pp. 27-30, with the exception that the number of suggesters employed was reduced from the final total of 19 used with the B groups to nine. With these classes only the four "big C's" and the sub-suggester *Prime* under *Characteristics* were used. Specifically, the following were the suggesters used:

CHARACTERISTICS
- People
- Relationships
- Issues
- Movements
- Events

CELEBRITIES
CHANGES
CONTRIBUTIONS

More written home work was assigned (at least every other lesson for the first ten weeks) than in the case of the

A and B groups in order to insure maximum drill upon the use and application of suggesters for the experimental group, and for the conscientious organization of material by the use of the topical outline for the control class. This afforded the teacher an opportunity to check upon the correct use of suggesters and of topics and to correct errors of identification and association before they became habitual.

RESULTS OF TRUE-FALSE TEST ON PILGRIMS AND PURITANS

(See Appendix H)

October 27, 1926

Scores (100 per cent. basis)	7A-3 Control Number	7A-6 Experimental Number
90	1	2
80	14	4
70	14	12
Total above 70	29=70 p. c.	18=44 p. c.
60	9	13
50	2	5
40	1	4
30	0	1
Total examined	41	41
Median	70	60
Mean	70	62

From the standpoint of retention the experimental group showed very much poorer results than the control group. Neither the teacher nor the experimenter is able to account for the poor results shown by the experimental class, unless the introduction of the suggesters tended to introduce a distracting feature. The children expressed themselves as finding it hard to memorize "all those big words." The test covers the first five weeks' work.

FINAL OBJECTIVE TEST (Appendix I)
December 7, 1926

This test covers the first fourteen weeks' work and is made up of true-false, multiple choice, character identification, (matching exercise), chronological order identification and completion tests. The results are as follows: (Scores on basis of 100 per cent.)

	Number	Range	Median	Mean
7A-3 Control	41	50—96	76	75.
7A-6 Exper.	43	44—96	82	76.5

Here the experimental group showed a slight gain over the control class, although the gain cannot be considered significant.

The second report period ended on December 7th, and representing as they do the teacher's judgment with regard to the work of the classes, these are also offered for what they may be worth in an experiment of this type. It should be added that inasmuch as the teachers at this time of the year know that the school's new roster organization is based upon the marks given at this time, this report represents the maximum of care and careful judgment.

HISTORY MARKS AT CLOSE OF SECOND REPORT PERIOD

Marks	Control	Experimental
90—100	2	2
80—89	11	11
70—79	20	24
65—69	10	7

Here, from the standpoint of teacher's judgment, the groups are almost equal, except that the experimental group has three less of the lowest ratings, or less than 7 per cent. This is but a negligible gain over the control group, especially since these marks represent teacher's judgments, rather than the results of objective tests.

A discussion with the teacher of these groups concerning

the failure of the suggester group to show a decided gain over the control class brought forth the expression of the opinion on her part that the suggesters require a high type of organization of material, and that children of this grade exhibit little ability to outline a body of facts of any kind. Accordingly a test was given both groups to ascertain the relative ability during the period of the experiment of the two groups in outlining unfamiliar text (but familiar subject matter.) The results are as follows:

TEST FOR MEASURING ABILITY IN OUTLINING AMERICAN HISTORY (Appendix J)

November 30, 1926

Scores (Based on 100 per cent.)

Classes	Number Tested	Range	Median	Mean	No. over 70 per cent.
7A-3 Control	43	21—78	63	59.3	10=23.2 p. c.
7A-6 Exper.	43	33—80	65	61.3	12=28.

From the results of this test we find 7A-6, the experimental class slightly superior in this type of organizing ability to 7A-3. Their failure to show a decided gain over the control class cannot be attributed to any relative defect in this direction.

Since none of the tests given to these groups thus far was so constructed as to bring the suggesters definitely into play, or to reveal any powers of organization, a general test was devised as follows:

In order to keep the conditions as natural as possible, it was decided to have the part of the study of Pennsylvania the children were ready to continue, placed before them in mimeographed form. The topics to be included were "*Penn's Laws and Government,*" "*Indian Treaties,*" "*James Logan,*" "*Boundary Disputes*" (with Maryland only), and the "*Walking Purchase.*" This material was all taken from the text book (Leffert's "Settlement of Pennsylvania"), but in slightly simplified form. Both groups were called together on December 9th in adjoining rooms (with sashes thrown

back), and the children were told that the next part of their history lesson was to be studied in class and according to the plan outlined by the teacher. After papers were distributed, the children were told to read silently with the teacher while she read to them. Each topic was read through by the teacher. In the case of the Boundary Dispute and the Walking Purchase the map was used in connection with the reading. When each topic had thus been read by the teacher, with the children following silently, the children were told to re-read the paragraph or paragraphs covering the topics once more. When all topics had been read by the teacher and re-read by the pupils in this manner, the children were asked to read the entire paper through once, turning down the paper as a signal when they had finished. Two periods (i. e. 90 minutes) later the groups were again called together, blank paper was distributed, and the children were told to "Write what you can remember about the material read during the first period to-day."

RESULTS. Not one child in the suggester group organized the material about the suggesters. Every child reproduced the facts stated as nearly as he could remember them in the order given on the paper.

As the mimeographed sheets had each of the above topics written in capitals at the head of their respective paragraphs, it was believed that these served as distracting suggesters to the experimental group and thus operated as a hindrance to the use of the usual suggesters. Consequently a new test was devised, upon the next part of Pennsylvania to be studied, namely, the German Settlers.

SECOND GENERAL TEST UPON PENNSYLVANIA COLONY, 12-21-'26

This time the material taken from the text book was mimeographed paragraph for paragraph, in simplified language where necessary, but without any topical headings other than the title, "The Settlers in Pennsylvania—The Germans." (See Appendix L.)

In this instance the teacher read the entire mimeographed

lesson to both classes assembled at the same time, the children reading silently with her. The children were then given the following directions: "Now you will be given twenty minutes to read this over to yourselves. As you read, try to organize it as you do when you are studying at home—the suggester group using the suggesters, and 7A-3 using topical headings. When you come to this class again to recite this lesson, or perhaps to write it, I shall expect you to have it organized according to the plan to which you are accustomed."

No further opportunity for study was given. At the close of the experimental study period 7A-3 moved on to their Science room and after that went to the auditorium for chorus work. The experimental class, 7A-6, spent the second period with their English teacher, and then went on to their Mathematics class. In other words, each class kept to its own program for the two periods following the study period at nine o'clock described above. At the close of the third period the two classes were notified to report once more to the rooms occupied during the first period. This second change from the regular routine was made without previous warning. Thus, ninety minutes after the study period above mentioned the two classes were assembled as during the study period, but were given blank paper instead of the mimeographed sheets (which had been collected at the close of the study period), and were given the following directions: "Write what you can remember about the material you read this morning during the first period. Seven A-3 will reproduce it under the proper topical headings. Seven A-6 will reproduce it under the suggesters. If you have any question to ask, raise your hand and ask it of me silently when I come to you. We do not want to disturb others with your questioning."

The reasons for the last two statements in these directions were:

1—To preclude the possibility of children asking aloud questions that could affect the responses of the rest of the class to the test.

2—To preclude confused responses on the part of children to whom the directions might not be entirely clear.

An account of the questions asked and answered was kept. There were two, as follows:

1—Question. "I left out something under this (pointing to *Movements.*) How do I show that this part down here (pointing to a paragraph on page 2) belongs up there (pointing again to *Movements*)?

Answer. "Place a star where you want the paragraph to appear on page 1. Enclose the added part on page 2 in brackets and place another star before it."

2—Question. "May I borrow a pencil? My point broke." (Pencil was given by the teacher.)

Marking the papers.

The first step was to go over the material to decide upon the number of facts stated, regardless of topics or suggesters. These totaled 76. The material was again studied to determine how many facts it contains that are not related to any of the nine suggesters listed. Only three were found. Therefore, the maximum number of facts that could be placed under the suggesters was 73.

Each paper in both groups was then scored for the number of facts given as complete statements (not as mere headings.)

In connection with each score was noted the number of topics (for 7A-3) and the number of suggesters (for 7A-6) correctly used. In addition to this, the numerical designation, "1" or "2" was used to indicate whether the pupil had headed his paper with the topic "The Pennsylvania Settlers," or its equivalent, or with this heading in conjunction with the additional topic, "The Germans." If both ideas were expressed in the heading, whether in the words stated above or not, the credit of 2 was added. Both groups of papers were gone over twice by the teacher and by the experimenter, with the sample copy of the material properly scored before them, and it is therefore believed that the

final scores recorded are as nearly accurate as it is possible to score general material of this type.

RESULTS OF TEST UPON THE GERMAN SETTLERS OF PENNSYLVANIA

(Appendix L)

December 21, 1926

	7A-3 Control				7A-6 Experimental			
	Max. No.	Range	Median	Mode	Max. No.	Range	Median	Mode
Max. No. correctly stated facts	76	3—30	16	13.8	73.	4—42	17.	18.2
No. topical headings	0— 9		4	3.4	8.	5— 8	8.	7.
No. complete titles				16			6	
No. partial titles				13			8	
No without titles				12			27	
Total examined				41			41	

Again, from the standpoint of facts recalled and stated, there is not a wide difference between the two groups.

The papers were re-examined now from the standpoint of organization. The 7A-3 papers were sorted as to "Good," "Fair," "Poor" and "No organization," and the 7A-6 papers were stored according to the number of suggesters correctly used. Eight were regarded as "Good," six or seven as "Fair," and five or less as "Poor." The results are as follows:

TEST UPON THE GERMAN SETTLERS OF PENNSYLVANIA

ORGANIZATION OF FACTS

	No. of	Good	Fair	Poor	No Organization	Total Tested
7A-3	Control	5	9	9	18	41
7A-6	Experimental	29	8	3	1	41

From the standpoint of organization, the suggester group is decidedly superior to the control group.

Organization Scores Defined

The papers of pupils in the control group were scored "Good" when they were found to display unmistakable and clear-cut organization. One of these papers, for instance, had the facts organized about the topical headings, Character (of settlers), Purpose, Settlements, Leaders, Occupations, Opposition to Slavery.

The score "Fair" was given if a logical sequence of facts was presented, but had one or more of faults like the following:

a—Too many sub-headings used as main headings.

b—Related facts recorded in different parts of paper under different headings.

c—Omission of classification equivalent to such major considerations as "Education," "Industries," "Contributions."

The score "Poor" was given in the case papers displayed topical headings to material arranged in the same order as given in the text, with no attempt to summarize these facts, or unrelated topics put down at random, or poor relationship between topics set down and material supposed to discuss them.

Papers marked "No Organization" displayed no topical headings whatever, and no attempt to discuss topics as such, whether expressed or understood.

Headings were not included in the score for facts unless those headings were in themselves a complete statement of a fact that was not repeated in the paragraph under it.

It should be noted in connection with the subject matter of this test, that there is but one fact and name in the entire lesson that had been taught the children before. That is Francis Daniel Pastorius, whose name was taught in the fourth grade (presumably) under "Four Prominent Pennsylvania Characters."

DISCUSSION OF THE RESULTS

It will be seen from the results of the various tests given the A and B Groups during a long sustained experiment that inferior groups by the use of suggesters can be pulled up to the level of and somewhat beyond the level attained by the group using the topical method described early in this investigation. When the method is tried out with a superior group paired with an equally intelligent group, the use of the suggesters does not result in a notable gain in retention, but it does result in a far better organization than is achieved by a parallel group taught by the topical method. How can we account for these results?

Reference was made above to a History Reading Test (Appendix B) given the B Groups. Summarizing the results for scores of 50 per cent. or less, and again for scores of 70 per cent. or over, we have the following:

Class	Score 50 per cent. or less	Score 70 p. c. or over
7A-2	15 out of 39	15
7A-3	11 " " 39	11
7A-4	15 " " 33	10
7A-5	11 " " 30	9
Totals	52 141–36.1 p. c.	45–31.2 p c

In other words, with the text book open before them, only one-third of these pupils were able to score 70 per cent. or over, while over one-third, viz., 36.1 per cent. scored less than half the maximum score. Only one child of the entire 141 examined scored 100 per cent.

Turning back to the Thorndike-McCall Reading Scale results for Group A and scoring them again for the number falling below an R. Q. (Reading Quotient) of 50, and also for those scoring the normal rate of 100 or over, we find the following:

Class	Score 60 or under	Score 100 or over
7A-3	11 out of 36 tested	23
7A-4	19 " " 36 "	11
7A-5	15 " " 33 "	13
7A-6	18 " " 31 "	6
Totals	63 " "136 " –46.3 p. c.	53–25.6 p. c.

Here we have one-quarter of all the pupils with a proficiency of 6B pupils. (The test was given at the beginning of the 7A term; therefore 6B proficiency is taken as the standard, the normal for 6B being 53.7, according to the authors of the test). Almost one-half of these pupils were below 6B standard of proficiency.

The Monroe Reading Test under the Illinois Test used with B Groups shows similar reading deficiency as follows:

Class	Score below 100 A. Q.	Score above 100 A. Q.
7A-2	10 out of 39 tested	28
7A-3	16 " " 39 "	26
7A-4	16 " " 33 "	23
7A-5	21 " " 30 "	20
Totals	63 " "141 " –44.6 p. c.	97–68.8 p. c.

It is not surprising, therefore, to find that groups with so many below normal reading proficiency for grade experience difficulty in learning how to use suggesters effectively. The organization of material about suggesters is a step decidedly in advance of reading and understanding the printed page.

But poor reading proficiency cannot be ascribed as the cause for the C Group results. In this case we must seek elsewhere for the cause. Bright children as a rule learn quickly to devise their own methods of studying, and are inclined to resent the imposition of a hard and fast device of another's planning. We have the testimony of the studies made by Breede and others in Supervised Study to substan-

tiate this statement. That there was a definite emotional reaction against the use of suggesters was evidenced at various times when children chatted confidentially with their teacher after school. Further evidence is to be found in the question almost invariably asked of the teacher, before beginning any written exercise, "Do we have to use suggesters?" This, in spite of the teacher's best efforts to have the children understand that no lessons were to be studied or written without the use of suggesters. Still further evidence of this distaste is found in the results of the first test on Pennsylvania, when the experimental group without exception failed to use suggesters simply because they were not told that they must.

The lack of study habits seems to offer a further obstacle to the effective employment of suggesters. At the close of the second test on Pennsylvania, when the children were given twenty minutes to read over the lesson, the question was asked by the experimenter of the children, "How many of you usually spend more time than you did to-day upon the preparation of your history lesson?" Only three children in the combined groups stated that they put more than twenty minutes upon the preparation of their history lesson. About one-quarter of the number admitted that they usually spent less time than twenty minutes, although, judging from the response to assigned home preparation, both the teacher's and the experimenter's estimate of the number would be twice as large.

It should be noted here, further, that the school is not authorized to assign lessons in 7th and 8th grades requiring more than a maximum of one hour's home preparation a day. To quote from one of the official notices issued by the Department of Superintendence to teachers of the Philadelphia Public Schools concerning the "Assignment of Homework,"

"Grades 7 and 8. Maximum one hour per day. This maximum does not include time that may be spent on research assignments or in reading for appreciation. Additional time may have to be devoted to these types of assignment at the teacher's discretion."

This paragraph is one of a series setting maxima for the several grades, and is preceded by the statement that these maxima "are in no case to be exceeded." As seventh grade children have on an average of three subjects per day requiring home preparation, it will be seen that no teacher is justified in expecting more than twenty minutes' preparation, except where research work or reading for appreciation are concerned.

The scant home preparation above referred to is reflected in the poor organization displayed by the control groups in all general tests examined. With both groups a strong tendency has been apparent throughout the experiment to read the lesson over once or twice, or to read it over until the children *think they know it*, to use their own expression, and to leave the recall of the content to chance and to the suggestions inherent in the teacher's questions. Children with good memories or those with a minimum amount of preparation can recall with a fair degree of accuracy a number of more or less related facts in the lesson. Organization of these facts about a well thought out series of significant topics or about the given suggesters involves an additional step in the study process; i. e., reflection, selection, and organization. This requires time and effort.

In the light of this experiment the control groups appeared to have a better chance of making a better showing from the standpoint of the number of facts recalled than the suggester group for the reason that each child could resort, consciously or unconsciously, to the type of associations that was most helpful to him in the process of recall or memorization, whereas the suggester group, in order to meet requirements, must make subtle distinctions between issues, movements, and events.

It is apparent from the results of this experiment that the two periods assigned to history per week allow insufficient time for adequate teaching of the meaning and application of even the nine suggesters used with the C groups. Children expressed themselves very frankly con-

cerning their difficulty in determining whether certain facts or statements should be classified as *Issues* or *Movements*, or whether other statements should be placed under *Contributions* or under *Events*.

For instance, an analysis of the papers on the German Settlers of Pennsylvania shows but 24 children of the 42 examined in the experimental group left the suggester *Issues* without any entry. Of these less than half wrote under *Issues* the word "None," or the statement, "None given," indicating definitely that they recognized the fact that the lesson under consideration brought up no notable issues. Other children incorrectly wrote one or more of the following statements, or the equivalent, under *Issues:*

In *America*—where to settle
Where to establish a refuge from persecution
Persecution in Germany
How to teach useful trades
How to comply with Penn's law about education
They wanted slavery abolished
How to be friendly with the Indians

Under *Movements*, only five children recognized the protest against slavery and the support and promotion of education as the appropriate associations here. Twenty-three interpreted the physical movement from Germany to the new land, or the moving westward in Pennsylvania in search of fertile soil as belonging to this suggester. Later, in discussing the matter with their teacher, they tried to justify this classification by reminding the teacher that the coming of the Pilgrims and the Puritans to America had been studied under *Movements*. They had completely forgotten the emphasis their teacher had at the time placed upon the search for religious and political freedom as the movement, of which the coming to America was but the expression—after all, a fine distinction for young children to realize.

Two children identified the establishment of schools as an *Event.* Another child classified the sending of the Mennonite protest against slavery to the Friends as an *Event,* and still another considered the establishment of farms under the same suggester.

These are all natural faults of identification in young children, and throw additional light upon the difficulty they experience in dealing with these suggesters, notwithstanding their apparent simplicity to the experimenter at the outset of the experiment. The type of identification of the materials of history with even the limited number of suggesters proposed appears to be a higher one than can be mastered by children of junior high school age in a two-period subject. Nor does the subject itself offer sufficient opportunity for children to use them habitually and as a matter of course.

It seems logical to conclude that if children could be taught the use of suggesters earlier in their school life, beginning with two or three and increasing the number of suggesters and sub-suggesters as the associations to be established begin to multiply, the suggester method would have a chance to function more effectively in the children's later school work. This might be considered as equally applicable to the development of the intelligent use of topical outlines, with the following important exception: The employment of the same suggesters over a period of years would be more likely to result in the habitual consideration of ideas and outcomes suggested by them than the use of topical headings, varying in number and scope from lesson to lesson and with the child's individual analytical ability.

CONCLUSIONS

1. The experience with Group A indicates the absolute necessity of proceeding sufficiently slowly in the teaching of suggesters through cumulative development and use to insure the pupils' thorough grasp of their meaning and adequate practice in their use (p. 69, Appendix A).

2. This experience indicates further that the effective use of suggesters is absolutely conditioned upon frequent review of the suggesters in such manner as to make certain that the pupils will be able to recall them instantly and in their proper relationships.

3. It is not claimed for the suggesters here used that they are the most efficient set that can be devised for the study of American History. By the use of the abridged set employed by the B experimental classes, however, relatively inferior groups were brought up, not only to an equal level, but to a level beyond that of the corresponding control groups (p. 35). A further experiment using paired groups of relatively low intelligence quotients would furnish an interesting check upon this tentative conclusion.

4. In the case of inferior groups, the use of these suggesters results in a better retention of material covered than in the case of superior paired groups, using the topical method (p. 35). In the case of superior paired groups, however, we may tentatively conclude from the results shown by the C groups that better retention will not be the invariable outcome of the use of prescribed suggesters in American History.

5. However, an increased skill in the organization of subject matter does result for both types of groups, i. e., inferior-superior and paired. This is a worthy end in itself and has significance for method in teaching history to children in the 7th and 8th grades.

COMPLETE 7A-3 RECORD

CONTROL CLASS

Pupil No.	Thorndike McCall R.Q.	Otis I.Q.	Phila. I.Q.	Composite I.Q. (Mean)	Preliminary Appendix D	N.EnglandT.F. (100 p.c. Basis Appendix H	Hist. Outl. (100 p.c.basis)Ap.J.	7AObj. (100p.c. basis) Appen. I	7A General (82 Max. score)	Final Report Grades
1	142	165	144	150.3	54	80	73	86	84	G
3	124	155	141	140.	33	70	42	80	19	F
5	113	157	132	134.	38	80	77	88	15	G
7	124	148	122	131.3	39	80	67	74	19	F
9	136	132	123	130.3	24	80	50	78	15	F
11	112	123	121	129.6	37	80	73	80	16	G
13	115	147	125	129.	32	70	63	76	37	F
15	132	135	118	128.3	23	80	75	88	35	G
17	116	96	168	122.6	11	40	35	50	08	P
19	140	120	119	126.3	31	ab	47	72	10	F
21	122	134	123	126.3	31	60	65	50	23	P
23	122	118	133	124.3	29	65	73	90	18	F
25	135	124	113	124.	40	75	78	64	12	F
27	124	128	119	123.6	37	80	70	88	38	E
29	124	118	126	122.6	18	50	47	60	03	P
31	112	127	127	122.	37	65	63	84	23	F
33	123	124	117	121.3	34	70	55	70	34	P
35	115	131	120	122.	36	80	65	80	ab	G
37	110	140	110	120.	25	90	58	96	35	E
39	114	125	120	119.6	25	50	43	ab	30	P
41	122	123	114	119.6	29	65	65	ab	07	P
43	115	120	123	119.3	26	80	50	84	24	G
45	121	115	120	118.6	36	65	61	78	28	F
47	125	114	115	118.	32	80	65	84	35	G
49	115	116	124	118.3	32	80	60	80	33	G
51	96	131	125	117.3	32	70	63	76	13	F
53	125	120	105	116.6	24	60	51	66	15	P
55	117	118	114	116.3	27	75	51	80	08	F
57	117	108	124	116.3	28	80	67	85	24	G

COMPLETE 7A-3 RECORD

CONTROL CLASS

Pupil No.	Thorndike McCall R.Q.	Otis I.Q.	Phila. I.Q.	Composite I.Q. (Mean)	Preliminary Appendix D	N.England T.F. (100 p.c. Basis) Appendix H	Hist. Outl. (100 p.c. basis) Ap.J	7A Obj. (100 p.c. basis) Appen. I	7A General (82 Max. score)	Final Report Grades
59	115	114	115	114.6	29	70	57	72	20	F
61	120	113	114	115.6	24	80	33	76	20	G
63	110	129	108	115.6	37	60	50	50	13	P
65	115	114	114	114.3	30	75	71	74	24	F
67	118	113	111	114.	28	80	71	80	35	G
69	123	108	110	113.6	25	70	53	66	09	P
71	112	107	121	113.3	36	ab	ab	ab	09	P
73	114	117	106	121.3	18	ab	50	62	09	F
75	111	116	108	112.	24	60	57	64	05	F
77	113	118	106	111.8	23	70	63	72	21	F
79	102	109	121	110.6	30	70	21	70	09	P
81	100	113	119	110.6	26	75	69	78	33	F
83	102	114	115	110.3	31	60	61	64	ab	F
85	103	113	115	110.3	32	70	65	86	33	F
87	112	102	116	110.	27	70	77	76	0	F

COMPLETE 7A-6 RECORD

EXPERIMENTAL CLASS

Pupil No.	Thorndike McCall R.C.	Otis I.Q.	Phila. I.Q.	Composite I.Q. (Mean)	Preliminary Appendix D	N.EnglandT.F. (100 p.c. Basis) Appendix H	Hist. Outl. (100 p.c. basis) Ap.J	7AObj. (100 p.c. basis) Appen. I	7A General (82 Max. score)	Final Report Grades
2	140	150	144	144.6	46	80	71	92	48	E
4	138	156	128	140.6	37	70	65	86	30	G
6	134	151	130	138.3	54	70	57	90	46	F
8	132	148	123	134.3	34	70	71	82	24	G
10	147	136	117	133.3	25	80	67	84	20	G
12	119	153	122	131.3	29	40	73	84	25	F
14	140	133	144	129.	33	80	65	88	30	G
16	120	147	118	128.3	50	90	67	96	46	E
18	136	140	109	128.3	28	70	78	92	18	F
20	120	138	121	126.3	31	70	37	82	28	F
22	123	144	112	126.3	36	60	50	50	20	P
24	106	143	125	124.6	41	55	40	88	27	G
26	116	144	113	124.3	44	65	70	92	25	F
28	117	121	130	122.6	29	70	80	86	27	F
30	134	114	119	122.3	21	30	70	44	17	P
32	118	133	115	122.	25	90	65	84	35	G
34	116	137	110	121.	19	70	48	60	15	F
36	118	133	115	122.	24	50	58	50	23	P
38	127	118	116	120.3	30	50	48	48	16	P
40	112	132	113	119.	24	60	58	76	24	F
42	112	137	109	119.3	27	60	51	78	24	F
44	121	115	120	118.6	36	60	68	70	25	F
46	106	110	140	118.6	34	80	70	68	ab	F
48	111	124	120	118.3	36	80	75	88	30	G
50	108	124	120	117.3	36	60	63	92	27	F
52	127	109	115	117.	23	70	68	88	27	G
54	102	115	133	116.6	26	70	63	84	42	G
56	114	127	108	116.3	27	ab	ab	left		
58	115	132	101	116.	29	45	75	76	28	F

COMPLETE 7A-6 RECORD

EXPERIMENTAL CLASS

Pupil No.	Thorndike McCall R.C.	Otis I.Q.	Phila. I.Q.	Composite I.Q. (Mean)	Preliminary Appendix D	N.England T.F. (100 p.c. Basis) Appendix H	Hist. Outl. (100 p.c. basis) Ap.J	7A Obj. (100 p.c. basis) Appen. I	7A General (82 Max. score)	Final Report Grades
60	114	126	105	115.	35	55	67	96	24	G
62	119	115	113	115.6	25	ab	68	64	25	F
64	115	120	111	115.3	24	50	61	78	24	F
66	121	109	112	114.	29	60	43	78	21	F
68	120	116	106	114.	48	60	53	82	24	F
70	120	111	109	113.3	31	50	47	74	17	F
72	117	100	122	113.	40	65	68	84	30	G
74	118	101	118	112.3	26	45	33	54	25	P
76	111	119	106	112.	39	60	70	64	18	P
78	112	119	104	111.6	28	70	65	94	19	F
80	125	109	101	111.6	28	70	70	54	25	F
82	117	109	105	110.3	24	ab	58	76	27	F
84	102	115	115	110.6	32	60	68	64	24	F
86	100	116	115	110.3	19	40	43	68	29	P
88	111	105	114	110.	25	65	60	64	17	F

APPENDIX A

Although relegated to the Appendix, this discussion deals with the first part of the experiment with suggesters conducted in the Jones Junior High School from February, 1925, to January, 1927. Several disturbing factors entered into this initial part of the experiment (See pp. 64, 65, 68, Appendix A) that led the writer to regard it more in the nature of preparation for the experiment with the two groups that followed than as an integral part of the experiment as a whole. The text of this thesis, therefore, deals with the continuation of the experiment with two additional groups of pupils, and under conditions more carefully controlled in the light of experience gained with the first, or "A" groups and described below:

The A Groups

In order to insure the persistence in school until the termination of the experiment of a sufficient number of pupils to make the results conclusive, it was decided to have two experimental and two control classes in charge of two teachers, each teacher having one experimental, or "suggester" class, and one control, of "non-suggester" class. The classes selected for this part of the experiment were known as 7A-3, 7A-4, 7A-5, and 7A-6, which were beginning their junior high school work in February, 1925.

These sections stood third, fourth, fifth and sixth respectively in order of intelligence according to the intelligence quotients determined by the Philadelphia Intelligence Test given to the children a month before their entrance into the junior high school. Thus, there were four sections among the ten 7A classes in the school that ranked below these classes, and two above. According to the ranking 7A-3 was superior in intelligence to 7A-4, while 7A-5 was superior to 7A-6. The following indicates the relative standing of the classes in Group A in this respect:

RANKING OF A GROUPS ACCORDING TO PHILADELPHIA TEST I. Q's

Class	Pupils	Range	Q-1	Median	Q-3	Q Value
7A-3	36	90—98	92.	93.	95.	1.5
7A-4	36	85—91	86.	87.	88.	1.
7A-5	33	81—90	82.8	83.8	85.4	1.3
7A-6	31	75—84	76.9	78.8	80.6	1.8

It will be seen that judging by the Terman classification for the Stanford revision of the Binet-Simon test, with which the Philadelphia Test is comparable, none of these sections ranks above normal intelligence. The only class that can be regarded as having average intelligence is 7A-3, the remaining sections being dull, and some in 7A-6 reaching the border-line limit.

Two preliminary tests were given the four groups as a check on the above ranking of classes according to their I. Q's, and especially to determine their relative ability in point of reading. The first of these was the Thorndike-McCall Reading Scale for the Understanding of Sentences, Form I. The test was given to the entire A group early in the term by Miss Laura Bulmer, one of the English teachers in the school, who was interested in this test from the standpoint of its correlation with I. Q's as determined by the Philadelphia Intelligence Test. She found a low correlation of .38. The results by classes are noted below:

RESULT OF THORNDIKE-McCALL READING SCALE

Class	No.	Range	Q-1	Median	Q-3	Q Value
7A-3	36	75—130	94.	103.	107.	6.5
7A-4	36	80—130	89.	94.	102.	6.5
7A-5	33	76—109	90.6	96.8	102.6	6.7
7A-6	31	79—116	87.8	95.5	97.2	4.7

Although the correlation between the reading quotients derived from these tests and the I. Q's according to the Philadelphia test was not high, 7A-3 ranks higher than 7A-4, and 7A-5 than 7A-6 from the standpoint of Q—1,—2 and —3 scores.

Judging from the norm 53.7 given for 6B, it will be seen that none of these sections shows superior ability in comprehension of simple sentences.

The second test was one designed by the writer for determining the ranking of the several groups with regard to comprehension of matter printed in their history text books (Gordy's History of the United States—Scribners.)

An examination of the Thorndike-McCall Reading Scale made it apparent to the writer that it might be possible for children showing ability with this test to find serious difficulty in comprehending the more complex subject matter of their text books. The paragraphs

in the reading scale are shorter and contain far simpler matter from the standpoint of vocabulary and subject matter than those to be found in their text book.

A copy of this test will be found in Appendix "B" with directions for giving it. It will be noted that the children were required to answer specific questions with the text book open before them, the questions being definitely confined to about four pages of reading matter, or about 1,100 words. This is about 200 words more of reading matter than that in the reading scale above referred to, but it is not longer than the average history lesson assigned for seventh grade.

It will be seen that this preliminary history test involves, in addition to comprehension of subject matter, the selection of such matter as is pertinent to the question asked. For this reason it seemed to the writer even better adapted to the purpose of determining the relative ability of the two groups about to study history under these experimental conditions than the simpler Thorndike-McCall Reading Scale. The test was given February 9, 1925. The results were as follows:

PRELIMINARY HISTORY TEST RESULTS

(Appendix B)

SCORES (Total possible score 80)

Class	No.	Range	Q-1	Median	Q-3	Q Value
7A-3	36	26—76	36.8	53.3	63.3	13.2
7A-4	36	16—70	40.5	46.8	53.	6.2
7A-5	33	17—77	40.1	47.2	57.4	8.7
7A-6	31	17—70	30.9	50.3	60.1	14.6

Here it was found that 7A-3 ranked higher than 7A-4 in every respect, but that 7A-6 ranked higher than 7A-5. In other words, there can be claimed but little difference between these two classes on the basis of the results of this test.

In accordance with the practice observed in conducting earlier experiments with suggesters (See pp. 7-11 of text) and the advice of Doctor Yocum and the seminary group in Educational Research at the University of Pennsylvania, the superior classes were selected for the control, or "non-suggester" group, and the inferior classes for the experimental, or "suggester" group. This plan was adopted upon the theory that if the duller sections could show favorable results after using the suggester method, the evidence in favor of

the success of this method would be the stronger, since it might be possible for superior sections to succeed in spite of an inferior method or adverse conditions.

It was therefore decided that 7A-4 and 7A-6 should be the experimental, while 7A-3 and 7A-5 should be the control groups. Through a misunderstanding which the writer is at loss to explain, however, the teacher in charge of the 7A-3 and 7A-4 sections was under the misapprehension that the 7A-3 section was the inferior one, and she proceeded to conduct that class as her experimental group for several weeks before the writer discovered the mistake. As it had by that time become evident that the two experimental sections would have to be combined into one experimental section and that a similar combination of the control groups would have to be made at the beginning of the following term, due to the dropping out of the 7A pupils, it was decided to continue using the 7A-3, or superior group as the experimental one, and the 7A-4 as the control group.

After the combination of the two experimental groups and the two control groups into a single experimental and a single control group respectively had been effected, the writer devised and gave to the groups the test given in Appendix C to determine ability to retain historical facts. At this time the former 7A-3 and 7A-6 experimental groups were combined in what was known as 8A-5 control group. The results follow:

RESULTS OF RETENTION TEST

SCORES (Highest possible score 17)

Class	No.	Range	Median	Mean
8A-1	Exp. 36	3—17	13	12.5
8A-5	Cont. 46	4—16	12	11.4

In point of retention the experimental group appears to be slightly superior to the control group.

The procedure followed in teaching the A groups is described in the text under "Procedure in Presentation of Suggesters," on pp. 15—18 and under "Details of Procedure" on pp. 27—30.

Disturbing Factor

SHIFTING OF CLASSES AT THE BEGINNING OF THE 3rd TERM (8th GRADE)

Twenty-eight of the original 7A-2 taught by Miss Wardle had never been in charge of any other history teacher since the beginning

of the experiment. All the rest of the children remaining in the A experimental groups in June, 1925; i. e., 32, changed teachers at the end of the first term. That is because the combined experimental classes originally consisting of 91 members, had dwindled to 60 by September, 1925.

Of the Control classes in group A, 34 pupils remained with Mr. McComb during the second term, but went to Miss Wardle as 8A-5 pupils at the beginning of their third term. All the rest of the children in the control groups, i.e., 31 original 7A-4 children went from Miss Wardle to Mr. McComb in September, 1925, and returned to Miss Wardle in their third term as 8A-5 pupils. Of the original 89 in the two control groups, there were but 65 left at the end of the first term. Hence the combination of classes could not be avoided.

The change of teachers was not deemed a serious disturbing factor, however, for the reason that (1) the success of the "suggester" method is dependent not so much upon the personality of the teacher as upon the method of presentation employed by the teacher. (2) When making the selection of the teachers to undertake the experiment, this possibility was anticipated, and it was felt that uniformity of methods of teaching employed by the two teachers in question would offset any disadvantages that might arise from a change of teachers.

THE RESULTS

As Meumann reminds us, we measure the effect of learning in terms of retention, which can be revealed only by the act of reproduction. Therefore, the first judgment of the effectiveness of the work in suggesters was based upon the relative progress of the classes as indicated by the teachers' marks given for work done during the term. The grades given at the close of the term represent the teachers' judgment of the relative worth of each pupil's work, including class-room recitations, note books and about four written reviews.* Although these grades represent judgment rather than exact scientific measurement or evaluation, they merit a place in this report at least as corroborative evidence. Of course, in every case the control and experimental groups received identical tests, but no attempt was made during the first, or 7A, term to devise the type of test that would definitely reveal the use of suggesters on the part of the experimental

*See Appendix M-1-2 for type of tests given.

group. This was an oversight that was corrected in conducting the experiment during the second, or 7B, term with the A groups, and through all three terms with the B groups. The term grades of the pupils of the two sections of the A group ranged themselves as follows at the close of the first term of the experiment.

FINAL GRADES 7A TERM

		Excellent		Good		Fair		Poor	
Class	No.	No.	Percent.	No.	Percent.	No.	Percent.	No.	Percent.
Exper.	75	3	4.	15	20.	46	61.3	11	14.7
Contr.	66	9	3.6	18	27.3	30	45.5	9	13.6

Thus it will be seen that the suggester group had 1.1 per cent. fewer failures that the control group, and that there was a slightly higher percentage of "Excellent" and "Good" grades for the experimental than for the control sections.

In order to determine the relative retention of the first term's work after a prolonged period, these pupils were given the preliminary test on this period of history (Appendix D) at the end of their vacations in September, 1925. Results are listed below:

RESULTS OF PRELIMINARY TEST IN COLONIAL HISTORY

SCORES (100 percent basis)

Classes	No.	Range	Median	Mean
Experimental	54	5—80	28	49.8
Control	48	11—58	32	32.

Here the experimental group fell below the control group except as to range of scores, there being four scores above the highest found in the control group, and two below.

At the end of the term, January, 1926, the class grades for the two groups were as follows:

FINAL GRADES 7B TERM

		Excellent		Good		Fair		Poor	
Class	No.	No.	Percent.	No.	Percent.	No.	Percent.	No.	Percent.
Exper.	44	3	6.8	15	34.1	20	45.4	6	13.7
Contr.	52	1	1.9	10	19.2	32	61.5	9	17.4

Again there was shown a higher percentage of "Excellent's" and "Good's" and a lower percentage of failures for the experimental groups. However, as it will be recalled that the experimental group

in the A part of the experiment was slightly superior to the control group, there is no real indication here whether the improvement in the experimental group is due to the use of the suggester method or whether it is to be attributed to the superiority of the group itself.

In order definitely to test classes for the efficiency of the suggester method, the problem had to be met of devising a test in which the questions would be non-suggestive of the form in which they were to be answered or of the specific information that was wanted, so that the answer itself would be evidence of the employment of the suggesters by the pupils. Consequently there had to be a rigid avoidance of the common type of question, such as: "What were the chief outcomes of the Revolutionary War?" "State the points of weakness in the Articles of Confederation," "Who were the leaders in the Massachusetts Bay Colony?" etc. In place of these, more general and non-suggestive questions had to be substituted. Therefore, the test consisted of the single question:

"Give an account of the chief difficulties that the newly formed United States Government had with foreign powers from the beginning of Washington's administration to the beginning of the War of 1812."

This kind of question introduced a new and serious difficulty, because these children, like the majority of school children of their age, have been habituated to focussing upon one point at a time and memorizing it more or less as the stereotyped answer to a specific question. Another unusual feature of this test is the fact that it covered a period early in the term, one upon which the children had already been examined and which they consequently dismissed from their minds; i. e., as they expected no further tests, they took no pains either to think of or to review the period again. Under stress of this unusual situation confronting them in this new type of question, many children fell back into their old habit of recalling as many facts as possible and jotting them down as they came to the surface, without regard to either logical or chronological order or to their relationship to one another. The children complained that they had never had "this kind" of question, and it was quite evident that a number of them did not even try to make a good showing.

The papers were scored on the basis of the number of relevant correct facts given, and showed the following results:

RESULTS OF GENERAL TEST GIVEN JANUARY 26, 1926
(Highest possible score 6)

Class	No.	Range of facts	Median	Mean
Experimental	43	0—6	1	1.6
Control	39	0—6	1	1.6

Here there was no gain indicated for either group.

During the third week in April, 1925, the four groups were required to do their studying and outlining from their text books in class. They were studying Jackson's administration. The teachers gave no help while the children were outlining their work, three forty-five minute periods being given over to the task. On the fourth day the teachers summarized the lessons and gave help in correcting the pupils' outlines. An examination of these outlines showed a fair organization about the suggesters on the part of the A experimental class, but not so good as in the case of the B group. The control group presented good outlines on the topical plan.

On the fifth day, without previous warning or preparation, the groups were tested on the work just completed. These groups wrote on the question, "Tell what you know about Jackson's times."

The scores were based upon the number of relevant correct ideas represented in the answers. The results were as follows:

SPECIAL TEST FOLLOWING STUDY PERIODS

					Papers showing organization	
	No.	Range	Median	Mean	No.	Per cent
8A-1 Control	43	0—24	6	5.7	17	40
8A-5 Exper.	37	0—28	6	7.	30	80

Here the slight gain shown by the experimental group is not significant, and cannot be ascribed to the use of the suggesters. Their papers, however, indicate a decided superiority over those of the control group from the standpoint of organization of their ideas and their presentation of them.

From the results of the various tests and summaries of the children's work in Group A there can be claimed no superior efficiency for the suggester method. As these results are not comparable with those of Group B reported in the text, it is evident that some disturbing factor in addition to those noted above, had been a work. The

writer accordingly examined the A groups upon their memorization of the suggesters, and found their recall of them, in many cases, rather labored, and a number of children gave the suggesters in such a way that it was evident they were not associating them with the proper main suggester. For instance, about one-half of the children wrote the four big C's, immediately followed with P R I M E, then with the suggesters for C L I P, etc., without showing the relationship of the key words with the main suggesters. As one of the most essential features for the successful use of the suggester method lies in the frequent review of the suggesters, with equally frequent practice in using them, the failure of the experimental group to get better results is clearly traceable to this defect. Moreover, the writer discovered during the first term of the experiment that the suggesters had been given too rapidly; that is, too many had been attempted at a time, which led to confusion. In the next groups the suggesters were introduced much more slowly, and greater emphasis was placed upon review and daily use.

The experiment with this A group was continued through three terms, i. e., until it had completed 8A.

For a continuation of the investigation with new groups, see text.

APPENDIX B

PRELIMINARY READING TEST FROM GORDY'S HISTORY

Directions to Teachers

1. Have a copy of Gordy's "History of the United States" on the desk when the pupils enter the room.
   Test is to be given to the following groups as they come to you today : 7A 3, 4, 5, 6.
2. Read directions at top of test paper once aloud with pupils.
3. Answers are to be written in *pencil* under the questions. In this test question and answer need not be combined. Write answer only.
4. Have every child write his name, section, room number, and date (February 9, 1925) at the top of the paper before beginning the test.
5. In question 1 tell children that "N. A." stands for North America.
6. Note time of beginning test (i. e., the time you finish giving the preliminary directions, including items 3, 4, and 5 on this sheet).
7. See attached sheet for answers to questions and for scores accorded each question.

TEXT UPON WHICH PRELIMINARY TEST IS BASED

SOME LEADING WESTERN TRIBES IN THE LAND OF THE BUFFALO

Gordy's History of the United States, p. 22 to end of chapter on p. 27.

Of the tribes west of the Mississippi, the Blackfeet, Sioux, and Cheyenne Indians lived in the region between the Saskatchewan River and the Arkansas. They were first of all hunters and warriors, and depended largely for their food upon the buffalo, of which millions at that time roamed over the Western plains. Life and industries were almost wholly related to the buffalo, for it furnished not only meat for food but hides for clothing and sinews for thread. As a rule, therefore, these Indians moved from place to place, following the herds, and for that reason made very little advance in agriculture.

Their dwellings varied according to the location and the season. In the woodlands, they were cone-shaped like a tent and were made

of saplings, with a covering of brush, bark, or skins. On the plains, they were earth lodges in winter and tepees in summer. The earth lodges were made by scooping a shallow, circular hole in the ground and then covering this with a cone-shaped roof of poles, over which was placed brush, or mats, or often earth. The tepees were shaped like a tent and made of long poles tied together at the top and covered with a skin or canvas wrapping. They were put together so lightly that they could be carried from place to place, and in this respect were unlike the wigwams in the East, which were more snugly built for permanent use. The Sioux Indians had few household utensils, and these were crude. Basketry and the making of rude pottery were the leading industries.

A SOUTHWESTERN TRIBE FURTHER ADVANCED IN THE ART OF LIVING

Far to the southwest of the Sioux were the Pueblo Indians, deriving their name from their peculiar dwellings, *pueblo*, meaning village. They lived in the region that is now Arizona and New Mexico. Here the land was by nature arid, but the natives brought water down in artificial ways from the near-by cliffs and mountains, and made the soil very fertile. By an extensive use of this method of irrigation they raised large quantities of Indian corn, as well as garden crops of pumpkins, beans, and other vegetables. The man worked the soil, while the squaw busied herself with such household industries as weaving and the making of pottery.

The Pueblo dwellings were built of adobe, or clay baked in the sun. They were a kind of apartment house, village and fort all in one; hence the name applied equally to the dwelling and to the tribe. One famous pueblo—Pueblo Zuni—was so large that it could house five thousand people. Some had two stories, some four, and others even seven. Each story was set back a little from the one below so that the roof of the first became the sidewalk, or street, of the second, and so on to the top.

To enter his dwelling it was necessary for the Pueblo Indian to climb by ladder to the top, and let himself in through the roof. This kind of building was adopted for defense, because in the arid plains, where there were no forests or other natural protection against hostile raiding bands, the entrance from above made attack more dif-

ficult, while the height of the structure supplied a lookout against surprises by the enemy. Sometimes the pueblos were perched high in a canyon, partly concealed in a niche of the cliff and approached by a difficult trail. The tribes living in these strongholds were called cliff-dwellers. They were probably the weaker or less warlike tribes, who thus tried to make themselves secure from attack.

THE INCAS IN PERU AND THE AZTECS IN MEXICO SHOW THE GREATEST ADVANCE TOWARD CIVILIZED WAYS OF LIVING

Of the natives whom the early explorers found in the New World, the Incas of Peru and the Aztecs of Mexico had made the greatest advance toward civilized ways of living and working. The Incas, by a wide use of irrigation, had made considerable progress in agriculture. They raised crops of Indian corn, and also grew potatoes and fine cotton. Living high on the plateau of the Peruvian Andes, they planted their gardens in terraces on the mountainsides, as is done in the hill towns of Italy to-day. Even more remarkable than their gardens and crops were their wonderful roads. These were broad, level and well constructed, and extended for miles up and down the mountains and along their sides. They were evidently intended for military uses, for at intervals were stationed storehouses for provisions and arms. All this construction in so mountainous a country involved enormous labor, and suggests the power of a strong ruling class.

The sources of the wealth of the Incas lay deep in the sides of their mountains. Large quantities of gold and silver were mined, and out of these precious metals were fashioned beautiful dishes, vases and ornaments, which were lavishly used in their temples of worship. The Inca temples, like their dwellings, were simple structures of stones, the dwellings resembling those of the Pueblos. Their skilful carvings of wood and stone in the making of pottery also showed their progress in civilization.

Though differing in some respects, the Aztecs, who lived in Mexico, had reached about the same stage of culture. They depended mainly upon agriculture and raised large crops, but they also carried on considerable manufacturing and trade. Like the Incas, they built stone houses of the pueblo type by the use of stone tools. Their roads, however, which were used both for military purposes and for

trade, were not much more than Indian trails. They were skilful in carving wood, in making pottery with beautiful ornamentation, and in working in gold and silver. Other industries were feather-work and the making of weapons. The Aztecs had also made some progress in picture-writing.

CONTACT WITH THE INDIAN GREATLY MODIFIES THE CHARACTER OF THE WHITE SETTLER

The presence of the Indians on this continent had a marked influence on the white settlers, especially during the period before the Revolution, when the settlements were only a fringe along the Atlantic coast. There were times when the Indians saved struggling settlers from starving. They taught the settlers how to raise corn and potatoes and tobacco, and made them acquainted with the deer, the wild turkey, and the small game of the forests. They showed them how to build the wigwam and the birch-bark canoe; how to track a foe through the forest; and even how to fight behind trees instead of standing in line out in the open. It is not too much to say that the frontiersman, who came to be the typical American, with his qualities of self-sufficiency, self-confidence, and independence, his determination to achieve against many discouraging natural conditions, his preseverance against adversity of all kinds, owed much of this character and success to imitation of the Indian either as friend or foe. In meeting the conditions found in his continuous advance westward the white man had to become adaptable and inventive in his struggle for existence.

However, it was as enemies that the red men made themselves most keenly felt; for when they realized that they could not occupy the land together with the white settler, whose mode of living robbed the Indians of their hunting-grounds, they bitterly opposed the encroachments of the white race and stood as a relentless barrier to its progress westward from the Atlantic coast.

PRELIMINARY TEST FOR EXPERIMENTAL AND CONTROL GROUPS

Given Feb. 9, 1925, to 7A 3, 4, 5, 6

DIRECTIONS TO BE GIVEN TO PUPILS: Read pages 22-27

in Gordy at least twice before attempting to answer these questions. Then take questions one by one, and read once more until you are sure you have found all the information needed to answer each question in its turn. The answers to every question will be found in the pages you have read. Write answers in the spaces left for the purpose. You may keep your books open throughout the test.

(Based upon Gordy's "History of the U. S."—p. 22, beginning with "Some leading Western tribes in the land of the buffalo," and ending with page 27 (end of chap. II.)

1. Give the names of the chief Indian tribes in N. A. living west of the Mississippi.

   Ans. Blackfeet, Sioux, Cheyenne, Pueblo.

2. What were the principal occupations of the tribes living between the Saskatchewan river and the Arkansas river?

   Ans. Hunting and warfare.

3. Which tribe had the most permanent and most complete dwellings in N. A.?

   Ans. The Pueblo Indians.

4. Name two principal ways in which these dwellings differed from those of other tribes in N. A.

   Ans. Pueblos had regular houses instead of tents or lodges scooped out of the ground.
   Dwellings of the Pueblos were made of sun-baked clay instead of saplings and skins.

5. Which were the most civilized tribes found by the early explorers on the Western Continent?

   Ans. Incas and Aztecs.

6. Where did each tribe live?

   Ans. Incas in Peru; Aztecs in Mexico.

7. What were the chief occupations of each tribe?

   Ans. Incas—Mining; Aztecs—Agriculture, mfgr. and trade.

8. In what ways were the Indians an aid to the early white settlers?

They taught settlers raising of corn and tobacco.
" " " how to hunt game in the forests
" " " " " build canoes
" " " " " " wigwams
" " " " " track foes through the forests
" " " " " fight from behind trees

9. Why did the Indians not continue to be helpful to the settlers?

Ans. Settlers took their lands,

APPENDIX C

RETENTION TEST ON "PREHISTORIC MAN"

3-25-'26

1. Give out the sheet on "PREHISTORIC MAN." Have pupils follow the material as you read.
2. Explain underscored words as you go, using the definitions given on the sheet marked "VOCABULARY."
3. After the word or words have been explained, read the paragraph containing them once again, so that children may get clearer and unified notion of the context.
4. Have children read whole exercise silently.
5. Have children write outline as you develop it and write it on board as per copy.
6. Review outline by putting each of the four headings to the class in the form of a question and having the children give the subdivisions from memory. Be sure each of these is given correctly before passing to the next heading.
7. On Friday, March 26, give the test.
8. Allow children to make outline in *pencil* to insure speed in covering ground.
9. Do not announce test or ask children to *study* outline.

PREHISTORIC MAN[1]

STAGES OF DEVELOPMENT

1. Historic and Prehistoric Times.—There was a time, many ages ago, when not a man in the world could read. There were no books, no writing, no alphabet. At length, after thousands of years, we know not how many thousands, men began to invent an alphabet and to make books. They then began to leave a written record of their own doings. This we call History.

The long ages preceding the time when men learned to write are called Prehistoric Times.. The period since men began to write is known as Historic Times.

2. Prehistoric Man and the Animals.—Through unknown ages man has made his way on and up to his present stage of enlighten-

1 Based upon Chap. I, Para. 1-4 inclusive of Elson's "Modern Times and the Living Past"

ment. In many respects man is inferior to the lower animals. He has not the strength of the ox nor the eye-sight of the eagle; he lacks the speed of the deer and the bloodhound's power of scent. But he stands immeasurably above all these creatures because of his superior intelligence, his cunning, his reasoning power. Man is the only creature on the earth that uses tools or fire or wears clothing, the only creature that speaks an articulate language, the only creature that has a moral and religious instinct. All these characteristics of man developed slowly during the prehistoric ages.

3. Epochs of Development.—The long period of man's advance in the use of tools and weapons is divided into four ages: (1) the Rough Stone age, (2) the Polished Stone age, (3) the Bronze age, and (4) the Iron age.

During the rough stone or paleolithic (pa-le-o-lithic, which means old stone) age man lived almost as the animals about him. His implements of war and of the chase were made of rough stone or of bones. Many thousands of such relics have been found in the past half century in France and other countries. As time passed man learned to polish the stones, to shape them into knives, arrowheads and stone axes or "tomahawks," as the American Indians called them. This age of polished stone implements is sometimes called the neolithic (or new stone) age. Thus primeval man gradually passed from one "age" to another, but how many thousands of years he remained in each we have no means of knowing.

At length man came to learn the use of metals, when and how no one knows. He first used copper, but copper is too soft to make good tools. In some way it was discovered that by mixing copper with a little tin a metal is formed which is much better than either for the making of implements. The mixture is called bronze. For many centuries, known as the bronze age, this metal was used in ever-increasing quantities.

Finally, man discovered how to make use of iron, which is the most useful of all metals, and happily the most abundant. The use of metals has been of immense importance in the human race. Without it our present civilization would be impossible.

4. Economic Progress—Again, with respect to man's economic progress, his methods of getting a living, we may divide his career into five stages: (1) the Hunting and Fishing stage; (2) the Pastoral

or Shepherd stage; (3) the Agricultural stage; (4) the Handicraft stage: and (5) the Industrial stage.

PREHISTORIC MAN

VOCABULARY

PRE-HISTORIC. Before the time of history; this is, before man knew how to write.

HISTORIC (TIMES). All the years during which people left written records of their doings. At first the records were in the form of pictures; then symbols came to be used; then, finally, writing with the alphabet. Historic times began over five thousand years before Christ, or nearly 7000 years ago.

EN *LIGHT* ENMENT—means knowledge, understanding. People who are enlightened have had *light* thrown upon things they were not able to understand before. People to-day are said to be enlightened, in comparison with the savages of prehistoric times, who were *un*-enlightened.

IM *MEASUR* ABLY—So great, or so far as to be impossible to be measured, or expressed in terms of length, breadth, height or depth. Vastly, immensely.

INFERIOR poorer.

SUPERIOR better, or finer, keener. People of superior intelligence are smarter and brighter than those of inferior intelligence.

ARTICULATE LANGUAGE—means speech consisting of words, not grunts or signs.

MORAL INSTINCT. People with a moral instinct have a conscience; that is, they have certain feelings that tell them whether things they do are right or wrong.

RELIGIOUS INSTINCT. A *feeling* that there is a God to be worshipped.

EPOCH—a period of time in history, in which certain things took place that made that period different from other periods.

PALEOLITHIC—Old stone (age).

NEOLITHIC—New, or later stone (age).

IMPLEMENTS—instruments, weapons, tools, utensils. Implements of the chase are hunting weapons.

ECONOMIC PROGRESS (OF MAN) improvement in ways of making a living.

PASTORAL This comes from a Latin word meaning *to feed.* You know a pasture is a grassy place where herds and flocks of animals, like cows, sheep, etc., feed. Therefore, the stage when man began to raise herds and flocks of animals is called the pastoral, or shepherd age.

DOMESTICATE—to make tame, and to make useful. Thus the savage tamed the wild wolves or jackals. These became the dogs of to-day. After they had been tamed, they were taught to draw loads and do other work for the savages.

HAND I CRAFT This means hand work.

INDUSTRIAL STAGE—The time when things are no longer made by hand, but mostly by machine. This is the age of great factories, mills, power plants, etc., with great sums of money invested to buy buildings and machinery and hire the labor to keep them going.

STAGES OF DEVELOPMENT OF MAN

3-25-26

Outline to be developed with class and placed on board as class copies it.

I Man's development is divided into two periods:

1. Prehistoric times (before man could read or write).
2. Historic times—When men left records of their doings.

II Why man is greater than the animals:

1. Because of superior intelligence and power to reason
2. " he makes use of tools and fire
3. " he can speak an articulate language
4. " he has moral and religious feelings

III Epochs according to tools man used:

1. Rough stone (paleolithic) age
   a. Man lived almost like animals, but used rough stone implements
2. New Stone (neolithic) age
   a. Man polished his stone implements and ground them into sharper tools
3. Bronze age

a. At first man used copper for his tools and utensils (too soft—sharp edges wore dull too fast)
b. Man learned to mix copper with tin, and thus make his implements of bronze. Harder and better.

4. Iron age. Man discovered iron made still better implements.

IV Economic stages (stages according to ways of making a living)

1. Hunting and Fishing stage
2. Pastoral or Shepherd stage
3. Agricultural stage
4. Handicraft stage.
5. Industrial stage.

RETENTION TEST—PREHISTORIC MAN

3-26-'26

Directions: Cross out the incorrect word in the pair of suggested words in each of the following sentencee:

1. Historic times are those that were before / after the invention of writing.

2. Man could / could not read in prehistoric times.

3. Iron was more / less useful to man than bronze.

4. Man advanced slowly / rapidly from age to age.

5. Bronze / Copper tools were made before copper / bronze

Directions: Answer the following questions:

6. Name three ways in which your history says man is superior to the animals.

7. Name the ages of man's development according to the tools and weapons he used.

8. Name the ages into which man's development is divided according to his ways of getting a living.

APPENDIX D

PRELIMINARY TEST IN COLONIAL HISTORY

I Opposite the name of each settlement write the name of its *first* most prominent leader.

1. Jamestown ————————
2. Plymouth ————————
3. Massachusetts Bay Colony ————————
4. Providence ————————
5. Hartford ————————
6. Maryland ————————
7. Georgia ————————
8. Pennsylvania ————————
9. Quebec ————————
10. New Amsterdam ————————

II From the list given below pick out the right word or words needed to complete the following sentences and write them in the blank spaces provided:

Fortune seekers
the Catholics
the Puritans
the Dutch
the Pilgrims
the French
dissatisfied Massachusetts settlers
English prisoners
the Quakers

1. Jamestown was settled by ————————

2. Plymouth was settled by ————————

3. The Massachusetts Bay Colony was settled by ————————

4. Providence was settled by ————————

5. Hartford was settled by ————————

6. Maryland was settled by ————————

7. Georgia was settled by ————————

8. Pennsylvania was settled by ————————

9. Quebec was settled by ————————

10. New Amsterdam was settled by ————————

Below are five questions. Three answers are written beneath each question. Read these answers over carefully and then place an "X" opposite the sentence that answers the question best. Here is a sample question with its answer properly marked:—

WHAT IS THE CHIEF REASON THE FRENCH WERE NOT SUCCESSFUL IN GETTING LAND IN AMERICA?

a. Because they had trouble with the Iroquois Indians.
X b. Because they established trading posts and forts rather than colonies.
c. Because England claimed her explorer, John Cabot, explored the American shores before the French explorers.

III WHAT WAS THE GREATEST SERVICE PENN RENDERED HIS SETTLEMENT?

a. He established peaceful relations with the Indians.
b. He provided a refuge in American for the Quakers.
c. He established a democratic form of government.

WHAT WAS THE MOST IMPORTANT RIGHT GRANTED BY THE MARYLAND CHARTER?

a. The colony could be ruled by the proprietor of the colony.
b. The persecuted religious sects from England were allowed to settle in Maryland.
c. The colonists were given all the rights and privileges of native-born Englishmen in the mother country, including freedom from taxation.

WHAT IS THE MOST IMPORTANT FACT ABOUT THE VIRGINIA COLONY?

a. It was the first colony in America in which tobacco was grown.
b. It had the first model form of democratic government.
c. It was the colony in which slavery was first introduced.

WHAT WAS THE GREATEST RESULT THAT CAME FROM THE SETTLEMENTS IN NEW ENGLAND?

a. The formation of the New England Confederation.
b. This was the settling place of the first emigrants from England.
c. People were left to worship God as they saw fit.

WHAT WAS THE MOST IMPORTANT OUTCOME OF THE NEW YORK SETTLEMENT?

a. It developed a large fur trade and commerce.
b. Each patroon had to provide a minister and a school teacher for his tenants.
c. Its friendly relations with the Indians helped smooth the way for the English when they later took possession of New Netherland.

IV Fill in the blank spaces with one of the following words that fits in best:

England	France
English	French

CONFLICTING CLAIMS IN THE MISSISSIPPI VALLEY

Both ———— and ———— claimed the territory between the Alleghenies and the Mississippi. ———— claimed it by the discovery of John Cabot, by exploration, and by Indian treaty, and ———— by reason of exploration. When the ———— colonies, which had been taking root on the Atlantic Coast, had spread as far west as the base of the Alleghenies, a struggle followed. By 1750 the ———— had built a line of sixty forts by way of the Great Lakes, from the St. Lawrence to the mouth of the Mississippi. Both French and English settlers, therefore, decided to try to colonize this region. For this reason the ———— planters in Virginia formed the Ohio Company. These settlers came in conflict with the ———— who were building a line of forts on the direct route from Canada to the Ohio. The war which grew out of this conflict resulted in defeat for the ————. Thus ———— added a large empire to her possessions in America.

V Some of the following statements are *true* and some are not. Read each sentence over carefully, and if you think it is true, place a capital "T" in the left-hand margin opposite the number of the sentence. If you think the statement is not true, place a capital "N" instead, as in these sentences:

T The Pilgrims came over in the Mayflower and settled in Plymouth.

This is a true statement; hence a "T" is placed opposite it

N William Penn was a Catholic

This statement is not true; therefore it is marked "N."

1. The French welcomed the English into their territory
2. The Massachusetts Bay Colony had a representative form of government.
3. The colonists in Virginia often had trouble with the Indians.

4. Maryland did not permit any other sects in her colony than Catholics.
5. The Quakers believed in taxation and war.
6. The early Virginia colony attracted thrifty settlers.
7. The cultivation of tobacco and the lack of labor caused the growth of slavery in Virginia.
8. The success of the Pilgrims helped to encourage the Puritans to come to America.
9. Pennsylvania permitted any sect of Christian people to enter her territory.
10. The people in New York welcomed the change from Dutch to English rule.

VI In as few words as possible write opposite each of the following words or expressions what they mean to you. In other words, give a short definition opposite each word or expression:

1. Patroon
2. The Charter Oak
3. Spinning Wheel
4. Pillory
5. Walking Purchase
6. Witchcraft
7. Trading post
8. Indentured servants
9. Religious Toleration
10. Mason and Dixon's Line.

APPENDIX E

7A Suggester Lesson — Experimental Group (2 Lessons)

JAMESTOWN—First English Settlement

CHARACTERISTICS—Key Word, "P R I M E"

P EOPLE

English colonists. About 100 sent out by the London Company (a group of merchants and capitalists in London.)

Type: One-half were gentlemen, the other half laborers, mechanics, and tradesmen, all unused to living in the wilds, or to do any hard work.

No women and no farmers among them—all were fortune hunters seeking gold.

R ELATIONSHIPS

a—With Mother Country.

Received grant of land from King James in England 1606 to colonize land between Cape Fear and mouth of Potomac. (See map.)

King granted them the same rights and privileges in America as they had in England as native-born English.

b—With Indians—Unfriendly. Smith's dealings with them. Invasion of frontier in Berkeley's time. (About 1660.)

c—With other colonies.

(Not taught at this time.)

I SSUES

Definition:—Problems—Question to be decided.

Survival or starvation.

1. John Smith saves colony (friendly relations with Indians, by which he procured food from them for colonists). Made the idle and lazy work—"He who does not work shall not eat," his motto.
2. "Starving time" after Smith's return to England. Arrival of Lord Delaware with a shipload of food kept the 60 survivors from returning to England.

3. Governor Dale (1611-1616) harsh ruler. His one great act the aboltion of common storehouse and giving of three acres of land to each man to cultivate as his own. (Evils of communistic system formerly in vogue. Advantages of individual ownership.)

MOVEMENTS

Establishment of homes by importation of women to marry colonists in 1619 (social betterment led to permanency of industry and progress.)

Agricultural—planting of tobacco—significance of to Virginia. Introduction of slavery—significance.

EVENTS

1607—Landing of first English colonists to form a permanent colony

(1614) Abolition of communistic system; establishment of private ownership of land

(1619) First negro slaves sold into colony.

(1619) Establishment of House of Burgesses giving people a voice in the government (First legislative assembly in America)

Significance of this and private ownership in attracting more colonists from England. Rapid growth of colony in prosperity and numbers from this time.

(1649) Religious toleration Act passed

(1676) Bacon's Rebellion (Conflict between autocracy and democracy. Significance of event in spite of Bacon's failure.

Note: Dates in parentheses need not be memorized.

CELEBRITIES

John Smith 1607-1609
Lord Delaware (1609)
Governor Dale (1611)
Governor Berkely
Nathaniel Bacon

CHANGES

Communistic ownership changed over to individual ownership

Living conditions changed with the coming of women into colony
Proprietary form of government changed to self-government
Fertile soil and tobacco crop success changed colonists from fortune hunters seeking gold to sturdy and thrifty farmers

CONTRIBUTIONS

1. 1st *Permanent English* settlement in America
2. 1st model form of democratic government
3. Introduction of slavery

7B Suggester Lesson — Experimental Group (3 Lessons)

CONDITIONS AND EVENTS LEADING TO THE REVOLUTIONARY WAR

CHARACTERISTICS—P-R-I-M-E

P EOPLE

Colonists—English
Feelings of the colonists stressed } different
Feelings of people in England stressed } view points

R ELATIONSHIPS

With England—early bonds weakening
With other colonies bonds of union increasing
With Indians—not discussed at this time

I SSUES Clip

Compulsion — British troops in America
Demands of King
Laws — Oppressive Acts passed by Parliament
Navigation Acts (1751-1761)
Taxation and representation
Stamp Act 1765
Townshend Acts 1767
Intolerable Acts 1774
Influence — Men of colonies and England influence the views of the people

Public Opinion — Who should pay the debt of the last French War?

MOVEMENTS — Drives

Realization of desirability of union leads to Committee of Correspondence

1765 leads to Stamp Act Congress

1774 leads to First Continental Congress

EVENTS

Navigation Acts

Sugar Act (1733)

Writs of Assistance

Stamp Act 1765

Boston Massacre

Townshend Acts

Boston Tea Party

Boston Port Bill

CELEBRITIES

Samuel Adams (Massachusetts)

Patrick Henry (Virginia)

John Dickinson (Pennsylvania)

Benjamin Franklin (Pennsylvania) working for America in England

James Otis (Massachusetts)

William Pitt (England)

8A Suggester Lesson — Experimental Group (5 Lessons)

INDUSTRIAL AND SOCIAL DEVELOPMENT IN ENGLAND AND AMERICA

Industrial revolution in England and America

CHARACTERISTICS

PEOPLE

1. English
2. Americans early in 19th century

Recall primitive mode of living
" " " " agriculture
" " " " communication
" " " " travel
" " " " manufacture
} Contrast between present and life at beginning of 19th cent.

R ELATIONSHIPS

In America.

At first rather isolated. Nineteen out of 20 lived in the country. About half live in cities and towns now.

With England (during first part of 19th century)

Strained. Slowing up of imports.

I SSUES

Survival of increased population depended upon doing all kinds of work more rapidly and cheaply than when country was thinly settled. Difficulties with English Embargo and Non-intercourse acts. War of 1812 cut off our supplies of tools and manufactures and made us develop our own resources

M OVEMENTS DRIVES (Use I & V only)

Industrial

England changed through inventions from home industries with hand labor to large-scale production by machinery

Ventures

Development of factories—Growth of towns

E VENTS

Invention of spinning jenny (1764) (England)

Comparison of old spinning wheel with new machines spinning hundreds of threads at a time

Invention of power loom

Invention of steam engine (1769) by James Watt (Eng.)

Invention of cotton gin by Eli Whitney

Invention of steamboat by Robt. Fulton (1807)

CELEBRITIES A-c-e

Attainers

Inventors—James Watt (Steam Engine)
Hargreaves Spinning Jenny
Edward Cartwright Power Loom
Robert Fulton Steamboat 1607
Eli Whitney cotton gin

CHANGES (Industrial)

1. Passing of home industries and growth of textile industries of North due to
    a. Water power in New England
    b. Use of English steam engines and textile machinery
    c. Employment of money withdrawn from shipping during War of 1812
    d. Development of factory towns (795 cotton mills in North in 1831)
2. Commerce
    a. Navigation by steam (better and quicker water transportation)
    b. Commercial development along Mississippi and tributaries
3. Growth of iron industry due to learning use of coal in Pa.
4. Development of North and South
    a. Cotton gin caused South to develop cotton on larger scale
    b. Small farms gave way to rise of great plantations.
    c. Need of Negroes to work fields (Increase in Slavery in South)
    d. Increase in factories in North (Increase of child labor)

CONTRIBUTIONS

1. Economic independence
   Inventions made it possible for America to be self-supporting
2. Growth of exports brought revenue to new country
3. Growth of slavery.

APPENDIX F

7A History Outline — Control Group (2 Lessons)

JAMESTOWN
(First English Settlement)

1. *First English Settlement in America*
   - (a) London Company
     1. Organization of English merchants
     2. Given a grant of land in America by the King
     3. Objects of the Company
        - (a) To produce goods (raw materials for company)
        - (b) To discover gold for Company
   - (b) Virginia: First colony, Jamestown 1607
     1. Character of settlers
        - (a) Some were "gentlemen," no money, knew little of work
        - (b) Others were poor workmen from farm districts of England
        - (c) Very few artisans

2. *Hardships after landing at Jamestown*
   - (a) Compelled to clear land of trees, used it for tents and forts
   - (b) Were unable to raise sufficient food
   - (c) Chose poor site for town; low, damp, malarial district
   - (d) Provided poor drinking water, salty or slimy
   - (e) Built poor houses, little shelter
   - (f) Brought over insufficient food, led to scarcity of food
   - (g) Men worked for Company rather than themselves, hence little interest

3. *John Smith*
   - (a) Leader of men, because the government made the idle work. Motto: "He who will not work, shall not eat." Great explorer, even up to the New England coast
   - (b) Occupations developed by Smith in the Colony

1. Lumbering—cutting down trees, hewing out lumber, gathering pitch
2. Trading with Indians
3. Manufacture of iron, chisels, hatchets

(c) Starving time

1. Injury of Smith caused him to return to England
2. Condition of colony became worse, little food
3. Arrival of Lord de la Ware (1609)
4. Appointment of Gov. Dale (1611)

4. *Development of Colony*

(a) Doing away with common storehouse
(b) Giving of three acres to every man to cultivate, began the plantation system.
(c) Admittance of women to colony (1619)
(d) Cultivation of tobacco and introduction of slavery
(e) House of Burgesses—people getting voice in government
(f) In 1649 religious toleration permitted

5. *Bacon's Rebellion in 1676*

(1) Causes
(2) Conflict
(3) Results

6. *Changes in Government*

(a) London Company until 1624
(b) Va. became a royal colony after 1624
(c) Governor appointed by King of England

7. *Indian Question* At first friendly; later serious trouble before being subdued.

8. *Governor Berkeley* Autocratic attitude caused Bacon's rebellion.

9. *Results*

(a) First Permanent English Settlement in America
(b) First model form of democratic government in America
(c) First place in U. S. territory where slavery was introduced.

7B History Outline

Control Group
3 Lessons

CONDITIONS AND EVENTS LEADING TO THE REVOLUTIONARY WAR

A. *Oppressive Acts passed by Parliament*

1. *Navigation Acts*
   - (a) Purposes
   - (b) Smuggling
   - (c) Writs of Assistance
     1. What they were
     2. Why used
     3. Results
   - (d) Sugar Act

2. *Stamp Act 1765*
   - (a) Purposes
   - (b) Attitude of people toward it
     1. Colonies (Why?)
     2. England (Why?)

3. *Townshend Acts*
   - (a) Taxes on glass, lead, paint, paper, tea
   - (b) Boston Tea Party

4. *Five Intolerable Acts* mainly to punish Boston because of destruction of the tea
   - (a) Boston Port Bill
   - (b) Massachusetts charter revoked. Became a royal colony.
   - (c) Trial of officials in England (Why?)
   - (d) Quartering of royal troops in the colonies (Why?)
   - (e) Quebec Act—took land claims away from Va. and Mass. and gave them to Quebec.

B. *Opposition of William Pitt and other English Statesmen*

Believed Colonies should be represented in Parliament and help make the laws concerning the American policy toward England

C. *Resistant Attitude of the Colonies*

1. *Theory*

(a) American colonies claimed the right to representation in Parliament in reference especially to levying taxes

"Taxation without representation is tyranny." This claim was based on the rights of native born Englishmen granted to the colonists in the Va. and Md. charters.

(b) English theory—King claimed that the colonies were represented in Parliament because Parliament consisted of representatives chosen in England. King feared that if colonies were granted representation that the English people in England would likewise demand better representation.

2. *American Opposition to Stamp Act*

(a) Remonstrances of Colonial Legislatures
Patrick Henry, Va.
John Dickinson, Pa.
James Otis, Mass.

(b) Stamp Act Congress 1765
1. Purpose—To obtain united action
2. Petition sent to King and Parliament

3. *Objection to the Stamp Act*

(a) Declaration of Rights

(b) Non-importation Agreement, Boycott of British goods

4. *Boston Massacre*

(a) Reasons

(b) Results—Circular Letters

5. *Committees of Correspondence*

(a) What they were

(b) Purposes

(c) How used

(d) Results

6. *First Continental Congress September 1774*

(a) Call due to the oppressive acts of England and the Stamp Act. Congress meeting place in Carpenter's Hall, Philadelphia.

(b) Work of Congress

1. Declaration of Rights sent to the King
2. Assemblies of Colonies and not Parliament supreme in regard to levying taxes
3. Letters and mounted messengers spread the news to all colonies, especially in reference to the happenings in and around Boston
4. Idea of Second Continental Congress

8A History Outline — Control Group (5 Lessons)

A. INDUSTRIAL AND SOCIAL DEVELOPMENT IN ENGLAND AND AMERICA

1. *Industrial Revolution in England and America*

(a) In England

1. Spinning and weaving home industries
2. Invention of spinning jenny and power loom
3. Invention of steam engine—James Watt
4. Steam power as applied to the weaving of cloth
5. Gradual develpoment of factories to house such machines. Attitude of people at first hostile towards such devices.
6. New towns were established near the coal fields in England—nearness of fuel

B. INDUSTRIAL CHANGES IN AMERICA

1. *Textile Industries in the North*

(a) Water power used in New England—no coal—Commerce had been destroyed—land poor for farming—necessity for new industry

(b) Use of English steam engines and textile machinery—how brought over from England

(c) Employment of capital withdrawn from the commer-

cial activities due to destruction of commerce during War of 1812

(d) Development of towns, especially "factory towns" along the "Fall Line"

2. *Steamboats*

(a) Fulton and his predecessors—Fitch

(b) Commercial development along the Mississippi and its tributaries—establishment of river towns

3. *Coal and Iron in Pennsylvania*

1. Coal used to smelt iron ore and limestone
2. Coal used for fuel in development of motive (steam) power
3. Iron used in manufacture of textile machinery

4. *Cotton Industrial Development of South*

(a) Eli Whitney's invention of cotton gin

(b) Results

1. Increase of area planting cotton
2. Spread of cotton culture to Gulf States
3. Increase and spread of slavery
4. Disappearance of small farms and increase in size of plantations
5. Disappearance of "Free Labor" in the South, unable to compete with "slave labor"

5. *Need of More Workers*

(a) Development of Industries cause necessity of more slaves in the South—each plantation complete in itself

(b) Factories in the North increased in size and numbers so that even women and children entered the factory—low wages and long hours

(c) Increase in the farming section of states, especially old Northwest Territory, by the immigration from countries of North of Europe to America

1. Causes
2. Where settled—why?
3. Advantages and results

APPENDIX G

STORIES OF THE COLONIAL & REVOLUTIONARY PERIODS

Author	Title
Andrews	Story of Ezekiel Fuller, the Puritan Boy
Altsheler	Hunters of the Hills
"	Lords of the Wild
"	Masters of the Peaks
"	Shadow of the North
"	Sun of Quebec
Atherton	The Conqueror
Austin	Standish of Standish
"	Betty Alden
Barnes	For King or Country
"	Yankee Ships and Yankee Sailors
Barr	Bow of Orange Ribbon
Bennett	Barnaby Lee
Boyd	Drums
Burgess	Pioneer Heroes
Canavan	Ben Comee
Churchill	Richard Carvel
Cooper	Last of the Mohicans
"	The Spy
"	Red Rover
Curtis	Little Maid of Bunker Hill
Dix	Blithe McBride
"	Soldier Rigdale
DuBois	White Fire
Dudley	King's Powder
Dyer	Sons of Liberty
Eggleston	Long Knives
Freeman	Green Door
"	In Colonial Times
Ford	Janice Meredith
Gregor	Jim Mason, Backwoodsman
"	Jim Mason, Scout
Hall	Boys of Scrooby

Hall.....Golden Arrow; Story of Roger Williams
Hawthorne ..... Scarlet Letter
Henty ..... With Wolfe in Canada
Irving ..... Sketch Book
Johnston ..... Prisoners of Hope
" ..... To Have and to Hold
Knipe ..... Flower of Fortune
" ..... Lucky Sixpence
" ..... Maid of '76
" ..... Polly Trotter, Patriot
Lisle ..... Diamond Rock
Meigs ..... Master Simon's Garden
Mitchell ..... Hugh Wynne
Paine ..... Privateers of '76
Sage ..... Little Daughter of the Revolution
" ..... Little Colonial Dame
Smith ..... Boys of the Border
Stoddard ..... Guert Ten Eyck
" ..... Noank's Log
Thompson ..... Alice of Old Vincennes
Tomlison..... Boys of Old Monmouth
" ..... In the Camp of Cornwallis
" ..... Three Colonial Boys
" ..... Three Young Continentals
" ..... Washington's Young Aids
True ..... Scouting for Washington
Warren ..... Little Pioneers
Wister ..... Virginian

MOVING PICTURES ON THE COLONIAL & REVOLUTIONARY PERIODS

Check any of the following moving pictures you have seen. Add names of any other pictures about colonial times you have seen.

Picture—Janice Meredith
America
To Have and To Hold
Courtship of Miles Standish
Birth of a Nation

APPENDIX H

7A TRUE-FALSE TEST ON PILGRIMS AND PURITANS

Directions:—Read each one twice. Write "T" or "F" for True or False to left of numbers before statements.

1. The Pilgrims were Separatists and wanted to leave the English Church.
2. The Separatists believed that the King should rule them.
3. The Dutch refused permission for the Separatists to settle in Holland.
4. The Indians and Pilgrims quarreled continuously.
5. The Pilgrims were well-to-do farmers.
6. The Dutch forced the Pilgrims to leave Holland.
7. The Speedwell made the journey to America.
8. The Mayflower sprung a leak and hence could not come to America.
9. The Pilgrims left Holland because they could not obtain work.
10. The Pilgrims thought they were going to Virginia.
11. Pilgrims were tolerant to people of other religious beliefs.
12. The Dutch granted the Pilgrims permission to settle in Holland.
13. The Pilgrims established friendly relationships with Indians.
14. The Pilgrims landed at Plymouth in 1620.
15. The land of the Pilgrims was held by the Company forever.
16. No compact was made by the Pilgrims in the cabin of the Mayflower.
17. The voyage of the Mayflower was very pleasant.
18. Miles Standish was the military leader of Plymouth.
19. Bradford was the governor of the colony of Plymouth.
20. The Pilgrims did not develop a democratic form of government.
21. James II granted permission to the Pilgrims to settle in America.
22. The Pilgrims desired to return to England at the end of the first winter.
23. The desire for religious freedom caused the Pilgrims to come to America.
24. The Pilgrims developed small farms, raising corn and potatoes.
25. Commerce and fishing developed among these folks.
27. The Puritans believed in total separation from Church of England.

27. The Sabbath was not kept very strictly by the Puritans.
28. The Indians and Puritans were very friendly.
22. The Puritans came over in great numbers.
30. John Winthrop helped in the settlement of Boston 1630.
31. The Puritans did not desire to purify the church.
32. Massachusetts Bay Colony was settled mainly by the Puritans.
33. John Endicott led in the settlement of Connecticut.
34. The schools established in Massachusetts were of great value.
35. The Indians never united against the Puritans.
36. The Puritans were wealthy land owners of England.
37. The hardships of the Puritans developed their character.
38. The intolerant attitude of the Puritans forced others to migrate.
39. Salem was settled by Puritans under the leadership of John Endicott.
40. Roger Williams lead in the settlement of Rhode Island.
41. The New England Confederation was of little value to New England.
42. New England had trouble with England concerning their rights.
43. The Charter Oak saved the Charter from being captured.
44. New England Confederation was formed in 1643.
45. The Puritans permitted only people of their beliefs to settle with them.
46. The industries of Old England were kept just the same in New England.
47. The people of New England made provision for education.
48. Governor Andros wanted to let the New England people govern themselves.
49. New England was a very undemocratic settlement.
50. The Puritans had little or no moral standards.

APPENDIX I

Last Name ..... First Name ..... Section .....

7A OBJECTIVE HISTORY TEST

If the statement is correct underline the word TRUE; if incorrect underline the word FALSE.

1. The London Company came to America to seek religious freedom. True False
2. Mass. Bay Colony believed in separation of Church and State. True False
3. The founder of Boston was Miles Standish. True False
4. Jamestown was settled in 1607. True False
5. The irregular coastline and rivers were a great aid to the early explorers and settlers. True False
6. The Puritans were poor, humble people. True False
7. Town Meeting government was held in the New England Colonies. True False
8. Agriculture was the chief occupation of New England. True False
9. Maryland was a proprietary colony. True False
10. Indentured servants were the white slaves of Virginia. True False
11. Georgia was settled by the poor debtors of England. True False
12. Slavery was introduced in America in 1619. True False
13. The English colonies were hemmed in on the west by the Appalachian mountains. True False

In each sentence underline the correct word or words:—

1. Plymouth was settled by the Puritans, Pilgrims, Catholics, poor debtors.
2. The leader of the Maryland Colony was John Smith, Miles Standish, Lord Baltimore, James Ogelthorpe.
3. Public schools and colleges were first established in Massachusetts, Connecticut, Maryland, Georgia.

4. The Puritans were fortune hunters, Catholics, Separatists, purifiers of the Church of England.
5. Rhode Island was settled by John Davenport, Roger Williams, Thomas Hooker, John Winthrop.

Draw a line with your pencil from the names in the first column to the correct phrase in the opposite column.

1. John Smith	Military leader of Plymouth
2. Miles Standish	Founder of Maryland
3. Lord Baltimore	Savior of the Va. Colony
4. Lord Berkeley	Governor of Boston
5. John Winthrop	Governor of Virginia

In the following list of terms underline "Yes" where two terms mean the same or nearly the same thing. Underline "No" where the meanings of the terms are different.

(1) Compact—Agreement	Yes	No
(2) Persecution—Toleration	Yes	No
(3) Pilgrims—Puritans	Yes	No
(4) Farming—Agriculture	Yes	No

Indicate the "time order" in which the following events occurred by placing the figure (1) after the event which took place first in history, the figure (2) before the event that took place second, and so on.

(a) The landing of the Pilgrims
(b) The Settlement of Jamestown
(c) The first Virginia Assembly
(d) The founding of Maryland

Fill the following blanks with correct name, words or date:—

1. The Pilgrims landed at .....in the year.....
2. The London Company settled in the year .....
3. The Mayflower Compact was made by the .....
4. The two leading colleges established by the Puritans were ....
5. The chief products of Virginia and Maryland were .....

Underline "Right" if the statement is correct. Underline the word "Wrong" if it is incorrect.

1. The New Englanders were greatly interested in education — Right Wrong
2. The First Legislative Assembly in America met in Virginia in 1619 — Right Wrong
3. Fishing and shipbuilding were industries of New England — Right Wrong
4. New England developed a Democratic Government. — Right Wrong
5. The Pilgrims said only church members could vote. — Right Wrong
6. The Indians were very hostile to the Pilgrims. — Right Wrong
7. Pilgrims sailed to America in the Mayflower. — Right Wrong
8. New Haven, Connecticut, was settled by Thomas Hooker to get religious freedom. — Right Wrong
9. The Religious Toleration Act was passed by Lord Baltimore. — Right Wrong
10. Roger Williams granted religious and political freedom to all his settlers. — Right Wrong

APPENDIX J

....
Last Name Date Section

TEST FOR MEASURING ABILITY IN OUTLINING AMERICAN HISTORY

DIRECTIONS:

This is a contest to see how well you can gather together and group the facts given about certain topics. You will be asked to read paragraphs like those given below and arrange the facts given in them under topics or headings. Sometimes the headings will be printed for you, and at other times you will be asked to make them up for yourself. Write neatly, in pencil, beginning right at the edge of the lines and use as few words as possible.

At the time of Columbus people had many strange beliefs about the earth. The first of these concerned the shape and size of it. It was thought to be much smaller than we know it to be, to be inhabited only on one side, and shaped flat like a pancake.

The other belief concerned the Atlantic Ocean. This was called the "Sea of Darkness," and was supposed to be inhabited by huge monsters which swallowed whole ships. In some places the water was thought to be boiling hot, and if a boat went too far they supposed it might possibly come to the edge of the earth and fall off.

What is the subject of these paragraphs?
What is the first topic discussed? Number it I.
What facts are given about this topic? Number them a, b, c, etc.
What is the second topic? Number it 2.
What facts are given about it? Number them a, b, c, etc.

Here are the answers, set down according to the above directions:

I. Beliefs about the earth.....

1. Size and Shape (of earth) .....

a. Thought to be much smaller.....

b. " " " inhabited only on one side.....

c. " " " flat like a pancake .....

d.....

e.....

2. Atlantic Ocean.....

a. Called "Sea of Darkness".....

b. Supposed to be inhabited by huge monsters (which swallowed whole ships).....

c. Water in some places boiling hot .....

d. If boat went too far would drop off .....

e.....

Read this and follow directions below. Read it again if you need to.

In 1584 Walter Raleigh received a charter from Queen Elizabeth granting him certain rights and powers in America. He was given the right to explore and settle the eastern coast, to make the laws for the colonies he founded, and he was made governor of these col-

onies. However, it was also provided that all settlers should have the rights given to the people of England.

Raleigh's expedition was unlike most others. They had as their purpose to find a way around or through America to Asia. But Raleigh thought America was worth settling for itself.

Two ships were sent out in 1584 and finally landed on Roanoke island, off what is now the coast of North Carolina. They found the land very pleasant and fertile. The Indians entertained them hospitably and the explorers spent several weeks there. When they brought the news back to England, the Queen was highly pleased. She named the colony Virginia in honor of her own unmarried life and knighted the fortunate Raleigh, who now became Sir Walter.

What is the subject of the paragraphs above? Write it on the first dotted line. Under each of the questions asked, put the facts given in the paragraphs about these questions, the first fact on line marked "a," the second on the "b" line, and so on. You may not need all the lines. Use as many as you need, putting only one fact on a line.

.....

1. What rights and privileges did the charter give?

   a.....

   b.....

   c.....

   d.....

   e.....

2. Give the difference between this and other expeditions.

   a.....

b.....

c.....

d.....

e.....

3. What did the exploring party find?

a.....

b.....

c.....

d.....

e.....

4. How was the news received in England?

a.....

b.....

c.....

d.....

e.....

Read this and follow the directions below. Read it again if you need to.

When the English began to settle America no country in Europe enjoyed the religious liberty which exists today. In England all had to attend the Protestant Episcopal—or State Church—and all had to pay taxes to support that church.

There were three classes of Englishmen who objected to this. The first were the Roman Catholics. They did not believe in the

teachings of the Church of England and would not attend. Furthermore, they objected to paying taxes to support a church other than their own. The second class were the Puritans. These people believed in the teachings of the State church but objected to its ceremonies. They wanted to stay in the church and change it to suit their ideas of worship. Lastly came the Separatists. These believed like the Puritans, in a much plainer form of church service. But instead of trying to get the Episcopal church to change its ways they wished to form congregations of their own and worship in their own way.

Write the subject of these paragraphs on the dotted line.

Below each of the headings put the facts given in the paragraphs which belong to the headings. Use as many of the lines as you need —one fact on each line.

.....

1. Religious laws.

   a.....

   c.....

   b.....

   d.....

   e.....

2. Reasons for Opposition

   a. Of Catholics.

      1.....

      2.....

3.....

4.....

b. Of Puritans

1.....

2.....

3.....

4.....

c. Of Separatists

1.....

2.....

3.....

4.....

Read this and follow directions below. Read it again if you need to.

The Battle of Quebec was one of the most important ever fought on this continent. It marked the end of French dominion in America, and was the turning point of American history. When Quebec fell the last stronghold of France was gone.

In 1763 the Treaty of Peace ending the French and Indian war was signed. It gave to England all the French possessions east of the Mississippi River and in Canada. France was permitted to keep two little islands near Newfoundland. Spain, who had helped France, had to give up Florida to England.

As a result of this war England became the leading nation in America. The language, law and civilization of our country became English. The war also showed the colonies the strength that lay in

union and made them less dependent upon the protection of England since it cleared the west of hostile people. Men could think less of their relations with the enemy and more of their relations with each other and with the mother country.

On the dotted line write the subject of these paragraphs. Below it write the first topic discussed—arrange the facts about it beneath the topic. Do the same with the other topics discussed in the paragraphs above. Arrange your work like that on the other pages you have done.

.....

1.....

a.....

b.....

2.....

a.....

b.....

c.....

d.....

3.....

a.....

b.....

c.....

If the sentence is correct or true write thr word "True" before it (to the left of the number). If it is not correct or false, write the word "False" before it. If you cannot be sure, guess. *Do each one:*

1. Raleigh was given a charter to settle the West Indies.
2. He was made governor of the colony.
3. The governor could do anything he pleased to the settlers.
4. Raleigh wanted to find a short route to Asia.
5. The natives were very friendly.
6. The settlers were much pleased with the land.
7. They stayed here for several weeks.
8. The queen did not like the reports they made.
9. Elizabeth, the Queen, was married.
10. Raleigh was knighted as a reward.
11. There was religious freedom in England at that time.
12. The people all attended the Catholic church.
13. The Puritans believed in the teachings of the national church.
14. The Separatists wished to remain in the State church.
15. The Puritans wanted plainer services.
16. The French were defeated at Quebec.
17. This battle was the turning point in American History.
18. France gave up Canada to England.
19. France was not allowed to keep any land here.
20. The Spainards gave Louisiana to England.
21. One of the results of the war was the union of the colonies.
22. The colonies depended less on England after the war.
23. The West remained full of hostile settlers.
24. Our laws are based upon Spanish Laws.

APPENDIX K

PENNSYLVANIA

(From Leffert's "Settlement of Pennsylvania")

PENN'S "HOLY EXPERIMENT"

William Penn considered the founding of his colony in Pennsylvania as a "holy experiment," for he believed the hand of God was in it because it had always been his dream to provide a religious refuge for those who were persecuted.

PENN'S LAWS AND GOVERNMENT

Penn called the collection of laws which he drew up for his colony THE GREAT LAW. It provided:

1. That all who believed in God should be free to worship Him as they pleased.
2. That criminals should be reformed in prison and should be taught a useful trade.
3. That every child should be a taught a trade.
4. That public schools should be established.

The form of government was very demacratic. There were to be first, the governor (or proprietor) of the colony; second, a council elected by the people; third, a general assembly, also elected by the people. The council was to propose the laws, and the assembly had the right to accept them or to refuse them. The governor and the council together were to have power to make people obey the laws that were adopted. Thus Pennsylvania had a good democratic government and provided a place where people might worship God as they saw fit.

INDIAN TREATIES

Penn always insisted that the Indians and the white men must be treated equally so far as the laws were concerned. He provided that no land was to be taken from the Indians by the white men unless they paid the Indians for it or gained it by a peaceful treaty.

Thus, Penn was always just to the Indians, and insisted that his colonists treat them fairly. One of the important councils Penn held with the Indians was held under what has since become known as the "Penn Treaty Elm." I wonder how many of you have seen the spot where that famous elm stood. It is in a small park not so far from here, near Shackamaxon Street on the Delaware.

Penn was different from many other white settlers in that he really kept his word with the Indians. The Indians also kept theirs. During all of Penn's life not a single drop of blood was shed in Pennsylvania on account of Indian troubles. The Indians repaid Penn and his colonists for their fair treatment by helping the colonists in many ways, such as in hunting game, and teaching them how to raise corn. As a result of the peaceful condition of the colony, many settlers poured in, and Pennsylvania grew very rapidly.

JAMES LOGAN

Penn had to return to England soon after his first visit, and when he left, he appointed his young secretary, James Logan, as the secretary and treasurer for the province. Logan was very faithful, and for fifty years he was one of Pennsylvania's most prominent men.

THE BOUNDARY DISPUTE

At the time of the founding of Maryland, maps of America were not very exact, and soon after Pennsylvania was founded, Lord Baltimore claimed that the Maryland grant extended as far north as Philadelphia. That was 15 miles farther north than Lord Baltimore's northern boundary was at first supposed to be. Of course, this caused many arguments and disputes, which were not settled until nearly 80 years later. David Rittenhouse, a famous mathematician, proved Maryland's northern boundry to be 15 miles farther south than Lord Baltimore had claimed. Later two great surveyors, Charles Mason and Jeremiah Dixon, surveyed the territory again and showed by a line of stone posts just where the Pennsylvania southern boundary should be. (Here it is on the map). These posts came at every fifth mile and had Penn's coat of arms painted on the Pennsylvania side and Lord Baltimore's on the Maryland side. This line became known as Mason & Dixon's Line, and now everybody understands this to

mean the boundary between Pennsylvania and Maryland. Sometimes it is considered as the boundary line between the North and the South.

THE WALKING PURCHASE

When Penn died, the Indians felt that they had lost their best friend. And indeed, the colony was growing so fast that many settlers spread out into the wilderness and built their cabins upon land that had not been bought by the whites of the Indians. For a while the Governor of the colony tried hard to keep the whites from occupying Indian territory without getting it from them fairly, but in spite of him the settlers continued to crowd out the Indians without paying them for their land. Naturally, the Indians became very discontented and disgusted with the treatment they were receiving from the whites.

While Penn was in the colony he bought from the Indians a tract of land extending along the Delaware river northward for a distance to be measured by three days' walk. With some of his friends and a few Indian chiefs, Penn set out one morning from the mouth of the Neshaminy Creek and the party walked at a comfortable rate, without hurrying, from morning until sunset. They sat down to eat lunch, and sometimes they stopped to smoke a pipe. At noon the next day they reached the spot where Wrightstown now stands, near the Neshaminy (here on the map) and here Penn stopped, saying he would complete the walk at some other time.

CHEATING THE INDIANS

The three days' walk had never been finished; and now the governor said that he and his men would carry it on. Secretly he marked the way for his men. He selected the three strongest and swiftest men he could find. At sunrise, these three men ran from the point which marked the end of Penn's first day's walk. The sheriff, with men carrying food and blankets, followed them on horseback, and three Indians went with them to see that they played fair. However, the Indians of course expected them to walk without hurrying, as Penn had done. But this time they saw the woodsmen running with all their might to cover as much land as possible in the remain-

ing two days. Of course the Indians complained bitterly of this kind of treatment. The Indians had expected the Walking Purchase to extend no farther than the lower part of the Lehigh River (here on the map), but at the end of 12 hours the men had run beyond that line. One man became exhausted, but the next day new, fresh walkers took up the trail, and when the walk was finished the last walker had reached a spot near Mauch Chunk (about here on the map). The settlers thought the Walking Purchase a great joke on the Indians, but it was a joke for which the colonists paid dearly later.

RESULT OF THE PURCHASE

When the Indians refused to leave the lands north of the Lehigh, the governor called their enemies, the Iroquois, and by giving them gifts, induced this enemy tribe to drive out the Pennsylvania Indians and made them move farther west.

In a few years England and France went to war against each other, and the conflict extended to America. The Delawares—those Pennsylvania Indians that had been driven westward—returned to their former lands and massacred the whites by the hundreds. Edward Marshall, one of the walkers in the Walking Purchase, did not escape them. His cabin was burned and his wife and children butchered. Thus Pennsylvania paid very dearly for her trickery toward the Indians.

APPENDIX L

EARLY SETTLERS IN PENNSYLVANIA

The Germans

(From Leffert's "Settlement of Pennsylvania.")

In the year when Philadelphia was begun, Francis Daniel Pastorius, a learned German, with a few friends and servants, arrived at the little woodland settlement. Pastorius and his companions were the scouts of the great bands of German emigrants who were about to come to Pennsylvania. There had been wars in Germany along the Rhine, and also much religious persecution. William Penn had traveled, preaching, through western Germany, and had sent into various parts of northern Europe agents who described the advantages of life in the New World. Those who suffered by war or persecution turned eagerly toward Penn's peaceful colony.

Joining forces with other Germans who arrived, Pastorius led his group of colonists to the high land near the Wissahickon not far from the first Philadelphia settlement. Here grew up a pretty village, straggling for two miles along the main street which we still call Germantown Avenue. The village itself received no special name, so the Philadelphians called it the German town, or Germantown. Most of the Germans who came to Pennsylvania at this time were Mennonites, whose beliefs resembled those of the Quakers, so that they made good and friendly fellow-citizens for Penn's English colonists.

The English encouraged the Germans to settle in America, and from 1705 up to the beginning of the Revolution, multitudes flocked to the colony which offered them cheap land and good treatment. Among these were many different sects—Mennonites, Tunkers or Dunkers, Schwenkfelders, Moravians, Lutherans, and Reformed.

Regardless of sect, the Germans delighted in farming. They knew the best land and pushed out into the wilderness in search of fertile tracts, especially in the limestone valleys. In these farming districts grew up towns with such German names as Manheim, Lititz, Hamburg, etc. By the time of the Revolution, Franklin estimated that one-third of the people in Pennsylvania were Germans.

Although the Germans clung to their old ways and speech, they were very industrious, honest, and economical. These quiet, sensible people formed a firm foundation for the prosperity of the colony. There were some very notable men among these Germans.

One of the most influential of these was Christopher Sauer, whom we sometimes call the German Franklin, because he set up a printing establishment in Germantown. He published a yearly almanac and also a newspaper which was eagerly read by Germans from New York to Georgia. He also published the first German Bible printed in America.

Count Zinzendorf, rich and well educated, was the leader of the Moravians, who settled Lititz and Bethlehem. As their leader was a man of education as well as of noble mind, the Moravians established academies which even to-day have high reputations.

The great Moravian work, however, was the conversion of the Indians. Fearlessly Count Zinzendorf went among the savages. His life was spared as if by miracle, and he was followed by scores of fellow missionaries. Although the results of their labors were almost wiped out later by the French and Indian War, the zealous Moravians did wonderful work in peacefully protecting the borders of Pennsylvania.

Near the present city of Reading lived Conrad Weiser, who learned the Mohawk Indian language, and became Pennsylvania's official agent in dealing with the Iroquois. One of our historians said of Weiser, "Had all white men been as just and friendly to the Indians as was this Pennsylvania German, the history of our western advance might have been spared some bloody chapters."

Another important fact to be noted about the Pennsylvania Germans is that they were the first group of people in this country to protest against slavery. Pastorius and his Mennonite friends were ahead of their times, for almost two hundred years before slavery was abolished these Mennonites sent to the yearly meeting of the Quakers a petition saying it was not Christian-like to keep slaves. Nothing was done by the Friends at this time, but in later times it was the Friends who were foremost in urging that slavery be abolished.

In order to fulfill the law laid down by Penn, parents were

obliged, under penalty, to see to it that their children should be "able to read the Scripture and write by the time they attain to twelve years of age, and that they be taught some useful trade or skill." This was the beginning of compulsory and vocational education in Pennsylvania.

This law, therefore, made it necessary for the settlers to provide schools. When the Friends set up a public school in Germantown, Pastorius, himself a man of education, was chosen as one of the teachers. For this school Pastorius wrote a text book, which was printed by Christopher Sauer. This was the first school book published in Pennsylvania.

During colonial times Schlatter and Muhlenberg, the leaders of the Reformed and Lutheran Germans, made great efforts to further education among their people, but met with little success at first. Now, however, there are a number of small colleges that have been established and helped by German influence. Among these are Franklin and Marshall College at Lancaster, Ursinus College at Collegeville, Muhlenberg College at Allentown, and Pennsylvania College at Gettysburg. Thus the Germans not only lived up to the law laid down by Penn with regard to a common school education, but they also provided for a higher education not demanded by Penn's law.

APPENDIX M—1

THIRD 7A TEST

(See Foot Note, P. 30, of text)

	Score value
1. Name the principal Indian tribes Penn found upon his arrival to the shores of Pennsylvania, and state which of these was the most important.	10
2. Tell what you know about Penn's dealings with the Indians and the dealings of the colonists with them after Penn had died.	15
3. Name the various nationalities represented in the new Pennsylvania colony and give a brief account of any one of these, telling where they settled.	20
4. What is meant by Penn's "Holy Experiment?"	10
5. Who were the settlers of the present Pennsylvania towns written below? Bethlehem Philadelphia Harrisburg Chester Haverford	10
6. Give a brief account of two of the principal boundary disputes in Pennsylvania, being sure to tell how they were settled.	20
7. What is the most important thing to remember about the early history of Pennsylvania with regard to Its government Its attitude toward other colonists who were not Quakers Its ideas about education?	15

APPENDIX M—2

Fourth 7B Test

	Score
1. What were the weaknesses of the Articles of Confederation?	20
2. How did the United States get control of the Northwest Territory?	10
How was it governed?	10
3. Explain why it was necessary to call a Constitutional Convention	10
Where and when did this Convention meet?	10
4. Give the compromises of the constitution	20
5. What departments of government were arranged?	20

TABLE OF CONTENTS

Formulation of the problem, 3, 4.
The suggester method described, 4—6.
Previous experimentation in the use of suggesters, 7—11.
Suggesters, set of, used in this experiment, 11, 12.
" principles underlying use of, 12—15.
Generai inclusiveness, 13.
Retainability, 13.
Cumulative memorizing, 14.
Suggestive form, 14.
Practice in use, 15.
" Procedure in presentation of, 15—18.
" Variation in procedure with B groups, 34.
" Variation in procedure with C groups, 40, 41.
" details of procedure, 27—30.
" psychological basis for the use of, 18, 19.
" comparison of, with topical outlines, 19, 20.
Selection of laboratory for experimentation, 20—24.
A, B, and C groups, 20.
The teachers, 21.
The school, 22.
The student body, 23.
Classes selected for experimentation.
A group (see Appendix A.)
B " p. 23.
C " p. 36.
Preliminary tests
A group (see Appendix A)
B group
Philadelphia Intelligence Test I. Q. Scores, 24.
Illinois Intelligence Examination " 25.
Preliminary test in Colonial History " 25.
Nativity, 26.
Retention Test, 26.
C group
Preliminary Intelligence Tests, composite scores, 37.

Preliminary test in Colonial history, 37.
Survey of reading of historical novels, 38.
Nativity, 39.
Reading Quotients derived from Thorndike-McCall Reading Scale, 40.
Equivalency of B groups, 27.
Reason for using inferior classes in group B as experimental, rather than control classes, 25, 26.
Equivalency of C groups (pairing method employed), 36.
Results
A groups (see Appendix A)
B groups
Retaking of preliminary test in Colonial history, 30.
Final grades at close of 7A term, 31.
" " " " " 7B " 31.
General test I, 32.
General test II, 32.
Re-scoring of Tests I and II, 33.
True-false tests on Pilgrims and Puritans, 33.
Test upon knowledge of suggesters, 34.
Test following study periods (Campaign in the South), 34, 35.
Summary of B group results, 35, 36.
C Group
Results of true-false test on Pilgrims and Puritans, 41.
Final 7A objective test results, 42.
History marks at close of second period, 42.
Test for measuring ability in outlining American History, 43.
First general test on Pennsylvania colony, 44.
Second " " " " " 44—47.
Complete record of results for 7A-3 (Control) class, 56, 57.
Complete record of results for 7A-6 (Exper.) class, 58, 59.
Discussion of results, 49—54.
Conclusions, 55.

APPENDIX A
Description of A groups, 61.
Preliminary tests.
Ranking of A groups according to Philadelphia Test I. Q's, 61.
Results of Thorndike-McCall Reading Scale, 62.
Preliminary history test results, 63.
Retention test results, 64.
Determination of experimental and control groups, 63.
Disturbing factors, 64, 69.
Results
Final grades, 7A term, 66.
Results of preliminary test in Colonial history, 66.
Final grades, 7B term, 66.
Need of specially designed test to reveal use of suggesters, 67.
Results of general test, 68.
Special test results following study periods in class, 68.
APPENDIX B
Preliminary reading test from Gordy's History.
Directions to teachers, 70.
Text upon which test is based, 70—73.
Directions to pupils, 73—75.
APPENDIX C.
Retention test on Prehistoric Man
Directions to teachers, 76.
Text of test, 76, 77.
Vocabulary of text, 78, 79.
Outline to be developed by pupils, 79, 80.
Retention test, 80, 81.
APPENDIX D.
Preliminary test in Colonial history, 82—86.
APPENDIX E.
7A Suggester lessons (for experimental group)
Jamestown, 87—89.
7B Suggester lessons
Conditions and events leading to the Revolutionary War, 89, 90.

8A Suggester lessons
Industrial and social development in England and America, 90—92.

APPENDIX F.

7A History outline (for control group)
Jamestown, 93—95.

7B History outline
Conditions and events leading to the Revolutionary War, 95—97.

8A History outline
Industrial and social development in England and America, 97, 98.

APPENDIX G.

Stories of the Colonial and Revolutionary Periods, 99, 100.

APPENDIX H.

7A True-false test on Pilgrims and Puritans, 101, 102.

APPENDIX I.

7A Objective history test, 103—105.

APPENDIX J.

Test for measuring ability in outlining American history, 106—113.

APPENDIX K.

Text of first general test on Pennsylvania, 114—117.

APPENDIX L.

Text of second general test on Pennsylvania, 118—120.

APPENDIX M-1

Sample test (non-objective type)—Third 7A test, 121.

APPENDIX M-2

Sample test (non-objective type)—Fourth 7B test, 122.